THE THERAPEUTIC GAZETTE

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ORIGINAL COMMUNICATIONS.

APPENDICITIS SIMULATING SACROILIAC DISEASE AND SCIATICA.[1]

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We are more prone to look upon referred pain as being an accompaniment of the chronic type of disease than of the acute, though it probably occurs as frequently in the latter as in the former. The chief difference may be said to lie in the fact that in many tubercular and chronic forms of disease referred pain is the rule, while in the acute conditions it is the exception. This being the case, the clinician must be on constant guard to avoid being misled by the mask of false locations. Symptoms are constantly changing in the same condition, and when one hears of or meets with a case of appendicitis, the mind is immediately centered upon the abdominal cavity, and in the great majority of instances upon the right inguinal region. When, however, a group of symptoms is presented which is totally removed from that area, and which is very commonly associated with conditions occurring as frequently as appendicitis, or perhaps more so, the vast majority of clinicians will diagnosticate the disturbance as involving the regions in which the symptoms occur. On this account attention should be directed to any unusual manifestations of more or less common conditions, that the clinical mind may be alert to the possible reflection of the subjective evidences of disease. It has been my privilege to see three cases recently, which, while rare in their occurrence, yet because of the serious consequences which might result merit record in surgical literature. The first one is as follows:

In May, 1905, A. H., female, aged seventeen years, was brought to me by Dr. R. W. Brace because of a limp in the right leg which had been present for about a month, and was *intermittent*. She gave a poor family history, though tuberculosis was not present. The patient was of normal size and presented the appearance of having enjoyed good health. There was no history of an injury immediate or remote, nor of any other exciting or predisposing cause for the condition. There was no disturbance of digestion and no history of attacks of pain or discomfort in the abdomen. The trouble came on gradually, without apparent cause, and was pronounced when I saw her. Examination showed normal function of the hip-joint and entire absence of tenderness and pain, either local or referred. Over the right sacroiliac joint there was an area which was very slightly sensitive, and when pain was present it was located here. Slight muscular rigidity was present on the right side of the lumbar spine, and the patient favored that side in stooping or moving. Lateral pressure on the iliac crests gave a suggestion of soreness in this articulation, and coughing or jarring likewise caused slight pain. The temperature was 99.5°. A blood count was not made. The grouping and localization of the symptoms about the back of the pel-

[1]Read before the Camden City Medical Society, Feb. 5, 1907.

vis and the absence of any other demonstrable lesions were strongly suggestive of incipient sacroiliac disease, and this diagnosis was finally made and appropriate treatment advised. Not being in circumstances to rest in bed and be treated at home, she was sent to the Orthopedic Hospital, where she came under the care of Dr. G. G. Davis, and to him I am indebted for the subsequent history. He writes: "A. H. was admitted to the hospital complaining of the hip. She had pain in the hip and impaired flexion and rotation. Coxalgia was at first suspected, but later examination revealed appendix symptoms, and this organ was removed on July 22, 1905. It was found to be inflamed and contained a fecal concretion. Primary healing and satisfactory convalescence followed, and she left the hospital cured."

Later inquiry through Dr. Brace found her in excellent health and with absolutely no symptoms of the former condition.

The history and course of this interesting case are rather unusual because of the absence of any symptoms pointing to appendiceal involvement. There was nothing to indicate intestinal disturbance, while all symptoms were highly suggestive of incipient disease of the sacroiliac symphysis. The later development of pain in the hip with limited motion in the joint was sufficient to warrant suspicion of more or less serious trouble in that part, and much support was given this theory by the insidious character of the onset and the *intermittency* of the limp. Had the appendix been examined when she was first seen by me, no doubt the true condition would have been determined, but the absence of symptoms directly referable to that part threw us all off guard.

The next case, somewhat resembling this one, came under my observation on August 30, 1906. It occurred in the service of Prof. J. Chalmers Da Costa, in the Jefferson Hospital, and with his permission I publish it. The history in the hospital records is as follows:

"G. D. R., aged thirty-eight years, a carpenter. Family history negative. Had all the diseases of childhood, but was a healthy man until in January, 1906, when he was seized with pain in both gluteal regions. This lasted for five days and was very severe. Three weeks later the pain again appeared, but only in the right leg, and was severe and sharp in character. He received all kinds of treatment for it, but without relief, and on his admission to the hospital (July 25) he complained of its localization at the greater sciatic notch, over the sacroiliac symphysis, and on both sides of the tendo Achillés. On July 28 Dr. Da Costa, through an incision over the right sacroiliac joint, gouged away part of the ilium. The bone appeared lighter in color and softer than normal. Iodoform gauze drainage was inserted, the muscles were united by sutures, and the wound closed. The sciatic nerve was then stretched through an incision in the upper and posterior part of the thigh. This incision was closed without drainage. Both wounds healed without complication, the lower one by first intention and the upper one by granulation. It was packed for two weeks. In spite of the treatment the pain persisted, and on August 18 a 2-per-cent solution of osmic acid was injected into the sheath of the right sciatic nerve just below its exit from the pelvis. On the 19th the leg was placed upon a double inclined plane, but this had to be removed by evening because of pain. On the 21st a long straight splint was applied on the outer side from the axilla to the ankle, but the pain continued in spite of what was done."

At Dr. Da Costa's request I saw the patient on the 30th of August, and profiting by the knowledge of the case first described, I examined the appendix and found it tender. I also obtained a history of repeated attacks of "stomach trouble" during the past year, which had been pronounced *intestinal indigestion* by a very capable diagnostician and teacher of this city. I ventured the diagnosis of chronic appendicitis with reflex pain projected along the lumbar and sciatic plexuses. On September 1, two days later, Dr. Da Costa removed the appendix, which he found lying across the

psoas muscle and almost entirely retroperitoneal, there being no mesoappendix excepting for about a half-inch at the tip. There were some old adhesions between the intestine and the peritoneum. The appendix was sacculated and cystic in one portion. Recovery was uneventful and entire relief from pain followed. Three months after operation I learned he was in excellent health and had had no return of his pain.

In this case the trajection of the pain was so complete as to entirely mask the true cause of the trouble. As in the case first detailed, there were no acute attacks of sufficient severity, or presenting sufficiently prominent local symptoms, to attract the attention of the attending physician to the real seat of the trouble. In his latest work on appendicitis, Deaver (p. 325) details a case as occurring in the service of Dr. Harry C. Deaver at the Episcopal Hospital in which the pain was referred entirely along the right sciatic nerve, but presenting symptoms of gastric and intestinal disturbance and preliminary abdominal cramp. "Operation revealed the appendix lying across the psoas and iliacus muscles behind the cecum, subserous, and its tip nearly reaching the iliac crest. There was a large abscess running up toward the liver. . . . On recovery from ether the pain in the thigh had disappeared. Death from septicemia occurred on the fourth day after operation."

In the article on appendicitis in Nothnagel's Encyclopædia of Practical Medicine there occurs the following: "From this region (right lower half of the abdomen) it (pain) may then radiate into every one of the regions mentioned or into the lumbar region, the testicle, the sacral region, the bladder, and especially down the right leg."

Kelly (Appendix and Its Diseases) calls attention to several striking cases in which appendicitis and coxalgia have been confused, but does not refer to the involvement of the sciatic or other nerves of the leg and thigh. Deaver (*loc. cit.*, pp. 221 and 222) believes that the reflection of the pain is in the main dependent upon the position occupied by the appendix, and discusses in detail the relationship between the two. In the event of adhesions being the source of pain, their location will likewise determine the direction in which the pain will be trajected.

Dr. George J. Schwartz very kindly furnished me with the following notes of a case under his personal care which is analogous to the cases reported above, though presenting later marked abdominal symptoms. The personal history is negative prior to July 20, 1904. At this time, after eating dried apples, he complained of slight headache and abdominal pain. Both disappeared after a dose of castor oil, but one week later, after a prolonged swim, the pain returned in the abdomen and the right leg. After a purgative was taken the abdominal symptoms disappeared, but the pain in the leg remained, and finally, after three weeks, unilateral backache appeared on the right side. This continued intermittently for two and one-half years, when Dr. Schwartz saw him. At this time (January, 1907) his temperature, pulse, and respiration were normal. There was no tenderness over the abdomen, either localized or general. He had colicky pains in the abdomen with involvement of the right sciatic nerve, and tenderness over this structure in the sciatic notch, popliteal space, and back of the ankle. There was also pain between the third and fourth metatarsals, which was made worse by squeezing the foot laterally. The nerve between these bones was resected, but without relief. Learning of the case of Professor Da Costa above mentioned, Dr. Schwartz then examined the abdomen carefully and was able to elicit tenderness over the appendix by deep palpation. In February, 1907, he removed a diseased retroperitoneal appendix, and the patient was immediately relieved of his pain and has had absolutely no recurrence of it.

The following case was undoubtedly one of referred pain due to rupture of adhesions following appendectomy, and illustrates the danger of mistake if the possibility of the referred pains is not kept in mind:

B. D., aged twenty-four years, was oper-

ated upon January 31, 1906, for acute suppurative appendicitis. His recovery was uneventful, and he resumed his work in a laundry in due time. On July 20, 1906, while lifting a heavy weight, he was attacked by a severe pain in the right side, radiating from the region of the wound to the iliac crest and toward the sacrum. The pain was excessive at the time, and numerous other similar attacks were precipitated by attempts to lift heavy objects. He came to the Jefferson Hospital, and I saw him in the Orthopedic Department, where he had been sent for examination of the spine. He presented no evidence of sacroiliac disease or of any inflammatory involvement of the spine. There was no muscular atrophy in the neighboring parts, and the hip-joint was freely movable. His temperature was 100°, and there was a slight mass in the right iliac fossa which was somewhat tender. A return of the old trouble was at first suspected, but later this proved to be the organized inflammatory exudate resulting from the operation which had been irritated and aggravated by the injury received during lifting. The sudden onset of the pain while making severe muscular effort, with the localized thickening and slight sensitiveness, pointed strongly to rupture of adhesions with projection of the pain along the lumbar and sciatic plexuses. The last attack of pain occurred while he was bending over a board and was located in the hip, and radiated down the back of the leg to the foot. It lasted for about a day and a half and occasioned considerable suffering. He is now free from these attacks, as he has changed his occupation to one which relieves him of all strain. The mass in the iliac fossa has also disappeared, and he feels no discomfort.

THE ERADICATION BY SURGICAL MEANS OF THE NASOLABIAL LINE.

BY CHARLES C. MILLER, M.D., CHICAGO.

The nasolabial line is seen quite frequently in comparatively young women. It is an expression line which changes the appearance of the entire lower face and may well engage the attention of the surgeon.

A few years ago attempts were made to eradicate this line by filling along the fold with paraffin, but this is not an entirely satisfactory operation—in fact, it is almost invariably a failure. Simple filling of the tissues along the bottom of the crease seldom produces even a temporary eradication, but the successful depositing of a thin plate under the tissues of the skin for a considerable distance on either side of the line may so stiffen them as to overcome it, but this is accomplished with difficulty, as paraffin tends to lump in these soft tissues and does not spread accurately, and we have not the means here to influence it as we have in other parts where it is more accessible. Paraffin protected by bulky soft parts cannot be molded accurately.

Nasolabial lines are due in large part to the excessive action of the muscles external to and above the nasolabial line, and a subcutaneous section made external to this line and parallel to it will divide more or less perfectly these fibers. Successful division of these fibers diminishing their action will remove to a degree the cause of these lines; then eradication may be aided somewhat by a plastic operation within the mouth, and a condition of the parts may be attained which will predispose toward the complete disappearance of the lines if they have not become too deeply marked.

To accomplish the subcutaneous section of the fibers the sectioning knife may be entered at several points. This knife should have a very narrow blade, and in the absence of a better instrument the Graefe cataract knife may be used.

Entered externally the knife makes so small a wound that the scar should not be noticeable subsequently, but should the operator care to take the very slight chances of an infection and subsequent inflammatory action the fibers may be divided

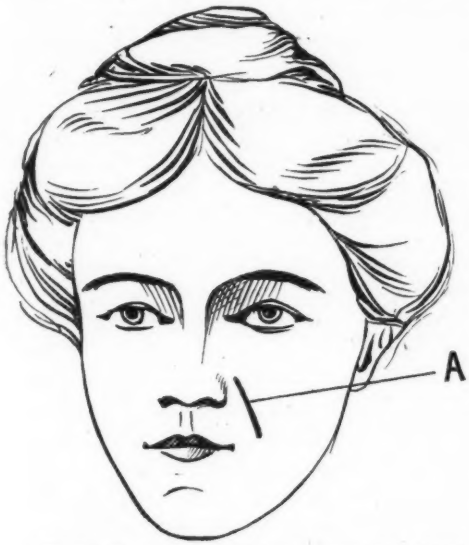

FIG. 1.—Illustrating line of subcutaneous section of facial muscles external to the nasolabial line. The knife is more conveniently entered from below.

through an incision made within the mouth. The division when made from within is not accomplished with the same degree of accuracy as when the knife is entered through the skin, as it is possible from this latter entering point to carry the blade along beneath the muscular fibers and then to divide these fibers in a line directly parallel to the nasolabial line. When the knife is carried through the tissues from within the division must be made with its point, and this interferes with accuracy and thoroughness. When the section is made through a puncture in the skin the knife should be entered at what I may term the dimple point—that is, the point where a dimple develops or should develop when the patient smiles. The knife is carried along parallel to the nasolabial line and should pass in deeply, so that it approaches very close to the mucosa. Section is accomplished by a sawing motion, and the edge of the knife, not the point, should accomplish the division. When the edge approaches close to the skin it is withdrawn and pressure applied externally to control subcutaneous bleeding. The puncture in the skin is sealed with a drop of collodion.

The sectioning is repeated on both sides, and then the lip is turned upward by an assistant, and after infiltration the mucosa is incised in a semilunar direction. The convexity may be in either direction, the section beginning beneath the alæ nasi and extending downward for about three-quarters of an inch so that it terminates about one-eighth of an inch above the angle of the mouth. This interval in the mucosa is deepened by as blunt a dissection as possible, so that as few of the blood-vessels as possible are divided. The angles of the semilunar incision are brought together so that the tissues are bunched under the nasolabial line.

It is a simple matter to make the incision with the convexity downward, but the operator must remember when the incision is so made that the completion of the operation may alter the appearance of the lips to a disadvantage. If this is likely to occur he should elect the opposite course, although it will be somewhat more difficult to close the incision when made high up unless the surgeon has at hand an assistant

FIG. 2.—Illustrating the mucous membrane incision beneath the nasolabial line. A A are to be brought as closely together as possible, bunching the tissues under the nasolabial line and elevating the depressed angle of the mouth.

capable of retracting the lip for him satisfactorily.

The operator may find it more convenient to do the plastic operation within the mouth first and section the fibers external to the nasolabial line subsequently. This is a matter of election.

Compression with a bandage is indicated for a few hours after this operation to minimize subcutaneous bleeding. These parts are vascular and bleeding beneath the skin is to be expected. If compression is used no complication need be feared from this bleeding.

ERRORS IN THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE SKIN—DON'TS IN DERMATOLOGY.[1]

BY L. DUNCAN BULKLEY, A.M., M.D.,

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In my last lecture I endeavored to give you some practical points regarding the diagnosis and treatment of diseases of the skin as they have occurred to me after many years' observation; at that time I mentioned a number of items positively which in a negative way I might have reserved for this lecture. So if I shall now seem to at all cover some of the same ground I trust that you will bear with me, for we all know how difficult it is to grasp all the points of a lecture, and also that good things will often bear repetition.

I want now to call your careful attention to some of the errors which may occur in the diagnosis and treatment of diseases of the skin, as they have been observed by me in the past years, and finally to sum up these two lectures in a series of "Don'ts in Dermatology," which may help some of you to avoid certain of the errors mentioned.

As I remarked last week, it is an error to regard manifestations of disease on the skin too lightly, and to say, "Oh, it is only some skin trouble," and then to prescribe only arsenic and zinc ointment; for as I have repeatedly shown in these clinics and elsewhere, this method will not give good results. I shall also hope to show in my next lecture that there are danger-signals from the skin which it is our duty toward the patient to heed, and which may be followed by serious consequences if not correctly interpreted and acted upon. A correct diagnosis, therefore, should always be arrived at if possible, although, as I well know from personal experience as well as from experience in the New York Dermatological Society, this cannot always be absolutely accomplished at first inspection.

It is an error not to recognize that a patient may often have more than one cutaneous ailment at the same time, and that one of them may mask the other and create confusion in diagnosis. I have on repeated occasions shown you in the clinic patients who have had several distinct cutaneous diseases, and on one occasion I lectured on a case in which there were five or six entirely different kinds of skin lesions, to each of which a different diagnosis would properly be given: this, of course, included such a minor affair as warts, or verruca.

As an illustration of the simultaneous occurrence of two eruptions which may cause confusion in diagnosis, I may mention the existence of *eczema, pruritus,* or *scabies* in conjunction with syphilis. The itching caused by one of the former eruptions can very easily raise doubt as to the true character of syphilitic lesions which may be present, for these latter rarely if ever itch, and the symptoms belonging to each must be very carefully differentiated.

Syphilis has been called the great imitator, and its lesions may often simulate and resemble those of many other skin affections; many errors, therefore, constantly occur in regard to its diagnosis, some of which I will try to mention.

[1]Lecture delivered at the New York Skin and Cancer Hospital, April 3, 1907.

Beginning with the initial lesion of syphilis, errors are continually made in two directions: First, in not recognizing the nature of the primary sore, especially in extra-genital regions; and secondly, in regarding as syphilitic lesions others which are of quite different nature, such an *chancroid, herpes progenitalis, balanitis,* etc. The latter error is much less common, but if made it will subject the patient to much anxiety, and possibly to an unnecessary course of syphilitic treatment. In regard to the recognition of the initial lesion of syphilis, it must be confessed that this is often a very difficult problem in many instances; and in accomplishing this much care must be exercised, while indeed it sometimes cannot be decided until after the appearance of some of the constitutional manifestations of the disease. There are many who are well acquainted with syphilis who claim that constitutional treatment should never be instituted until this occurs. In doubtful cases this is the wisest course to pursue, as it is questionable if any time is lost by being thus certain; for when induration has sufficiently developed in the primary sore to make the diagnosis perfectly certain, the system is already thoroughly infected.

In regard to extra-genital sores it is possible that in relatively few instances is a correct and absolute diagnosis made before the occurrence of the eruption; indeed, as a rule, it is the discovery of the eruption and its recognition as syphilitic which leads to the search for the site of infection, which can generally be determined if sufficient care and effort are expended. Only yesterday I saw for the second time, in consultation, a patient whom I had seen eleven days before, with a maculopapular eruption of such unusual form and distribution that I could not believe it to be syphilitic. I therefore entered the diagnosis as *dermatitis medicamentosa,* since he has been taking some remedies which I thought might have produced the rash: he was constipated, and had a coated, indented tongue. He had been married three years and had not been exposed venereally, and at the first consultation I could find no trace of an initial lesion of syphilis anywhere. As the eruption remained and increased I was asked to see him again; some of the papules now suggested syphilis, and on the scrotum one had formed a mucous patch. He was stripped entirely, and examined from head to foot minutely for the primary sore, which was not found at first. Some enlarged postauricular glands and others in the neck led me to examine the mouth and throat again more carefully, and on drawing out the tongue greatly there was an ulceration found low down on the right side, with some soreness of the left; the right tonsil was distinctly hard when felt with the finger; and the diagnosis was complete. He tended a liquor bar, in a very bad section of the city, and undoubtedly had acquired the throat chancre from an infected drinking-glass.

Extra-genital chancres on various parts of the body present such varying aspects, as some of you have observed from the cases which I have presented in the clinics, and from the models and pictures which I have passed around, that it is difficult to give concisely any perfect description of them, and I must not dwell on this topic much longer. I may tell you, however, that errors in regard to their diagnosis have often occurred, and chancres of the lip and eyelid have frequently been excised as *epithelioma,* of which I have personal knowledge; on the tongue they are also often thought at first to be epithelioma. Occurring on the bearded face, by infection in shaving, I have known them to be long treated for parasitic *sycosis,* and when appearing on the fingers I have also known them to have been incised, as some sort of an inflammatory process. I have seen a number of cases of chancre of the tonsil which had been regarded and treated as diphtheria or tonsillitis.

Errors also in the way of regarding as syphilitic certain cutaneous or other manifestations which prove to be of quite a different character are of not infrequent occurrence. A practitioner asked a certain gentleman well versed in venereal diseases,

together with myself, to see in consultation a patient whom he believed to have a chancre in the urethra; and inasmuch as what he had regarded as a copper-colored eruption was observed on the chest, he thought that the diagnosis was confirmed. Endoscopic examinations showed no chancre, but only a gonorrhea, and a microscopic examination of some scales scraped from the eruption on the chest proved it to be *tinea versicolor;* the patient had no syphilitic infection. I have repeatedly known the eruption caused by copaiba, administered for a gonorrhea, to be mistaken for a macular syphilide.

Errors have also repeatedly happened under my observation in mistaking an eruption produced by iodide of potassium for one caused by syphilis, and the remedy has been pushed more and more as the eruption seemed to increase. I have also seen the same occur in the use of the bromides.

Later in syphilis one constantly sees errors, more commonly in the failure to recognize the disease when existing, but also occasionally in regarding non-specific lesions as syphilitic. Do not forget what I mentioned about syphilis being an imitator of other lesions, and in cases which are at all doubtful expend any amount of energy and patience in order to make a correct diagnosis.

Eighteen months ago a gentleman, aged forty-five, was sent to me from a distant city with a mass of ulcerative disease about the lower abdomen, groins, upper thighs, and buttocks which almost defies description, and which had been variously diagnosed. He had been married eleven years, had a healthy child of ten, and his wife had had no miscarriages. The trouble, which had begun on the scrotum ten years before, had progressed steadily all the time up to his visit, in spite of continuous and most varied treatment from many physicians: this had included long courses of *x*-rays and Finsen light, injections of antitoxin twice a week for four months, all kinds of local treatment, including severe cauterizations, and latterly it was seriously proposed to excise the entire area and treat it with skin-grafting. There were in all several dozen square inches of deeply ulcerated surface. To be brief, syphilis had never been suspected, and yet the entire surface was absolutely healed at the end of three months, under very active mixed treatment, with absolutely no local applications except absorbent cotton, and the use of peroxide of hydrogen twice daily.

Late syphilitic lesions about the face are most commonly mistaken for *lupus* and *epithelioma,* and I have seen very many which had been thus treated, often with *x*-rays in late years, quickly yield to proper antisyphilitic treatment. Epithelioma will sometimes develop upon an old syphilitic lesion, especially on the tongue, and the diagnosis may then be very difficult. I have spent so much time on syphilis that I will have to be more brief than I could wish in regard to many other matters which I desire to mention; so pray pardon me if I speak rather dogmatically.

So relatively simple a disease as *scabies* is often the cause of many errors, as all practicing dermatology must often observe. I cannot here enter into its differential diagnosis, which I have often demonstrated to you in the clinic, but let me remind you that we constantly find it even in the higher walks of life: many a patient has been treated a long time with various internal remedies, when a brief course of proper local treatment has ended the trouble promptly. The same is true in regard to *pediculosis* both of the scalp, body, and pubis, as I have seen time and again: in a number of instances a prolonged itching, with some raw lesions about the scalp and ears, where the trouble had been regarded as *eczema,* was found to be of this nature, and everything was quickly cured by correct treatment.

Errors also constantly occur in regard to the vegetable parasitic diseases, and I have already mentioned an instance in which *tinea versicolor* was thought to be an evidence of syphilis. Many a case of *ringworm* of the scalp has been long undiagnosed, and I must confess that in certain cases, both of this disease and *favus,* it is extremely difficult to make a positive

diagnosis without the aid of the microscope; so let me urge you to make constant use of this means in cases which are at all doubtful. Some time ago a physician teaching dermatology in another city sent me a patient with a little hard, crusted patch on the left cheek, beneath the eye, for my opinion as to the desirability of its excision, as an *epithelioma*. The crust seeming peculiar I picked at it, and found that I could raise it entire; placing some of it properly prepared under the microscope, it was seen to be wholly composed of the spores and mycelia of *favus*, and the whole affair yielded very quickly to a little antiparasitic ointment. Such a case is indeed rare, as is also favus elsewhere than on the scalp, but I mention it to show how errors can be avoided.

Quite a common error often occurs in regard to chronic erythematous *eczema* of the face, which time and again I have known to be called "chronic erysipelas" by former medical attendants. You know perfectly well that erysipelas is an acute infectious disease, and these cases should never be thus wrongly designated and treated. The same term is sometimes erroneously applied to diffuse *acne rosacea*. There is also a *pseudoerysipelas*, a diffuse lymphatic infection from nasal disease, which recurs again and again about the nose and center of the face, and which is also often wrongly called true *erysipelas*. Its whole course is quite different from true erysipelas, and if it is so designated and its real nature is not recognized, and if the nasal cavity is left untreated, the trouble may recur indefinitely. I have repeatedly been called to the hospitals in regard to cases suspected to be erysipelas, and therefore so isolated, which were found to be only a general erythematous eruption due to pus absorption, or one of general irritation of the skin caused by the use of iodoform in dressing.

The *exanthemata* should not often give great difficulty in diagnosis, when all the symptoms are appreciated and analyzed, although occasionally errors will be made. Several times I have discovered *smallpox* in a patient in a hospital, where the disease had not been suspected, but where the rash had been supposed to be a simple affair. On the other hand, when in Vienna many years ago during a great epidemic of this disease, Hebra constantly found in the wards patients who had been sent in for smallpox, in whom the eruption was of quite a different character. Somewhat the same happened recently in connection with the hospital. There came to the out-patient clinic a patient in whom the eruption was so very suspicious that the Board of Health was notified, and the case was regarded as smallpox and taken in charge; but after a few days of observation it was decided not to be smallpox, and he was discharged and came to the clinic. I did not see the patient at the time, but understood that the eruption was probably *erythema papulatum*.

Not very long ago I was called to a neighboring city to decide in regard to a case of suspected *scarlatina* which had been quarantined during an epidemic of the disease there, the health officer agreeing to accept my verdict. The child, who had been attending school, was found to have a desquamation, affecting principally the hands, very suggestive of that of scarlatina, with some of the same on various parts of the body. But on investigation it was found that on several occasions before she had had similar attacks of shedding the epidermis, without previous fever or other apparent illness, and her father was also subject to the same. The decision was against scarlatina, as subsequent events proved. This was a rare and curious case, but it shows how careful one must be to investigate and understand everything relating to a patient, and not to judge from a single symptom.

Eruptions caused by the internal administration of drugs are not infrequently the cause of errors in diagnosis. I have already mentioned these from *copaiba* and *iodide* and *bromide of potassium* as being mistaken for syphilitic manifestations. I have repeatedly seen an eruption from quinine which could with difficulty be distinguished from that of scarlatina, as may that from belladonna, while those from the coal-tar products are often mistaken for the eruptive fevers; the eruption following

injections of antitoxin are now pretty well known.

Dermatitis venenata, or the eruption caused by poison-ivy and other plants, is often mistaken for *acute eczema,* and much unnecessary internal treatment is sometimes given for the purely local phenomena. Some time ago I knew of a rather ludicrous error arising on account of poisoning with ivy. A bridal couple were on their wedding journey, and somewhere in the woods the husband, in answering a call of nature, came in contact with poison-ivy, and as a result was very severely poisoned about the genital region, with enormous swelling and inflammation of the parts. The young and innocent bride, imagining that any trouble in that region indicated something of evil origin, was greatly excited, and telegraphed to her parents to come and take her home, as she had been greatly deceived and wronged. Fortunately a skilled dermatologist at once recognized the difficulty and the episode ended satisfactorily.

Of course there are a large number of other affections of the skin in regard to the diagnosis of which errors are often made, but I must not linger longer on this part of the subject. These that have been mentioned are sufficient to indicate the caution which I have so often urged upon you, and emphasized in my last lecture: namely, that much care and thought should be bestowed on dermatological cases, the individual primary and secondary lesions should be studied carefully, the whole surface being examined, and the history accurately learned; also that a mental process of exclusion of other possible eruptions at all similar should be made; and the diagnosis established with certainty before prescribing. This may seem to be commonplace and useless advice, but experience has taught me that it is necessary to urge it upon you.

Turning now to *errors in treatment,* we may best consider them under the two natural heads of constitutional and local measures. Here let me say that much of the unsavory reputation which diseases of the skin have for chronicity and rebelliousness is due very largely to errors in diagnosis and treatment. Both are partly to blame, but I believe that the latter (treatment) may be rightly charged with the greatest share. The diagnosis is often correctly made, but, pardon me for plain speaking, I think that the shockingly poor treatment which most cases receive accounts largely for their rebelliousness. This poor treatment, as I have already intimated, commonly comes from too little thought and study being given to the cases; since diseases of the skin are too often regarded as light and trifling affairs, and the patient is put off with some local application and little else.

Case-taking and carefully written records made at each visit before prescribing would, I am confident, remove much of the trouble. These notes should include a statement of the patient's condition in every particular, in regard to all the functions; they should embrace more or less of a description of the skin lesions then present, and certainly the treatment given at the last visit; and then, on the basis of all this, the prescription, abbreviated if necessary, is written in the notes and a full copy given to the patient, with exact directions as to the use of the remedies prescribed. Only in this way can one correctly follow a case to a cure; and in this way a cure will be much more likely to follow than when matters are treated in a haphazard manner.

It is granted that many diseases of the skin are more or less rebellious to treatment, and it is a fact that very many of them show no tendency to self-limitation, at least while the patient remains in the same conditions of life as before, or until the skin is forced into a healthy action by vigorous and prolonged treatment. But I am one that believes firmly in the efficiency of proper treatment. I have watched the matter for years, and I believe that medical acumen should discover where the error lies, that medical skill should devise the ways and means of overcoming what is wrong, and that medical energy should see that these measures are properly carried

out. So you see I am an optimist and not a pessimist in therapeutics.

This leads us to a consideration of general therapeutical measures for the cure of many diseases of the skin. I know that some of them are purely local in character, as *scabies,* and these will be spoken of later; but I wish now to speak of errors which constantly occur regarding the management of very many cases which unmistakably have constitutional relations which are of prime importance to treat in order to have the best success, or indeed any very satisfactory result.

I dislike to reiterate so much that I have said in my lectures last year and the year before, but I must briefly state again that I find it a constant error in regard to the previous treatment of cases which I see that so little attention has been paid to the patients themselves, to their physical condition, and the performance of their functions of life. I continually find patients with various skin affections to be in a deplorable state as far as their digestion, metabolism, and elimination are concerned; and I frequently find those whose dietary and hygienic conditions are dreadfully wrong. Now while all these may not always be the direct exciting cause of the eruption, I know from experience that they have a very great bearing on recovery from the cutaneous disturbance, and I know also that the latter often recurs when there is a relapse in regard to the former.

As a corollary to this it follows that an error is made when any line of internal treatment designed to benefit the eruption is continued regardless of the condition of the patient's system from time to time. Many a time have I seen the same tonic or alterative treatment persisted in, when it was entirely unsuited to the patient's present condition, when there was gastric or intestinal disturbance, or when the kidney secretion was grossly deranged. In almost every case the exact prescription must be planned and suited to the needs and requirements of the system at each particular time, and no remedy or combination of remedies can be always suitable to every case, any more than the same sized shoe can be comfortably worn by every member of a regiment of soldiers. This may seem to be a trite and commonplace remark, but I am sure that it is not always acted on.

But, on the other hand, it is an error not to persist in some treatment for a sufficient time to accomplish the results desired: as stated, it may be necessary to change the actual prescription many times to suit the changing condition of the patient, and often even to suspend special treatment for a while in order to rightly meet certain conditions. But through it all one definite plan or purpose is to be carried out, until a cure is effected; and all this can be accomplished only by careful and persistent written records.

It is an error also, often shared by the patient, to suppose that when improvement has once begun, nature, in the way of a vacation, or even change of location and scene, will accomplish the rest. I often tell patients that it is better to do the right thing in the wrong place than the wrong thing in the right place; and I continually see more benefit resulting from the faithful carrying out of all needful treatment at home than from going elsewhere, even to the best locality, while using inefficient treatment, not rightly guided from time to time.

This error is constantly occurring in regard to the treatment of *syphilis,* and, as I said in my lecture last week, there is a great responsibility resting on physicians who at any time have charge of patients with this disease; for syphilitics so commonly imagine that as long as there are no external manifestations of the malady there is no need of faithful and continued treatment for the period which experience has demonstrated is necessary to overcome the poison and its effects.

Many times an error is committed in regard to patients with *syphilis* who go for what is too often wrongly spoken of as a "cure" at Hot Springs and other health resorts. It can be readily understood that no course of treatment, however active, for from three to six weeks can ever cure this

disease. I have seen many lamentable cases of the later ravages of syphilis in patients who have been so deluded.

Much the same error often happens in connection with patients suffering from diseases of the skin. They continually wander unsuccessfully from one mineral spring to another, the same or different seasons, on the advice of physicians and friends; and they thus not only lose much time which might have been devoted to successful treatment, but expending large sums of money in vain they become skeptical as to the possibility of cure, and are thereafter even less inclined to follow out any careful and well-directed plan of treatment which would eventuate in a cure.

It is an error, which is very deeply seated in the professional and lay mind, that arsenic is "good for diseases of the skin," and, as I mentioned in my last lecture, it is relatively rare for one who sees much of diseases of the skin to find patients with cutaneous maladies of any duration who have not been thus treated, and commonly with arsenic alone, to the utter neglect of all other internal or constitutional therapeutics; and, I may add, those patients are often found to be in a deplorable state in regard to their diet and hygiene, and the action of their emunctories.

Somewhat the same error frequently occurs regarding the use of iodide of potassium, which perhaps is given in the possibility that the lesions are syphilitic, in the absence of an accurate diagnosis. On the other hand, errors constantly occur when the latter element is not definitely recognized and efficiently treated as specific, as has been already mentioned and illustrated.

An error is also often made in overlooking a malarial element, and many a time an otherwise rebellious eruption will yield when this is thoroughly overcome.

We see, then, that a proper diagnosis in diseases of the skin often consists in more than simply giving a correct name to the lesions which are on the surface; indeed, it is quite as frequently the patient that is to be diagnosed, for as we have seen the cutaneous lesions may sometimes be the least important of all the symptoms presented.

On the other hand, it is quite as essential to recognize and properly treat as local eruptions those that are really such, although with some of them a certain amount of general care and treatment is essential in order to get the best results.

We will now briefly consider some of the errors which are liable to occur in connection with *local treatment*.

First let me remark that it is an error to expect too much from local treatment alone in every manifestation of disease on the skin, and also to expect immediate results in many cases; with the best treatment yet known many lesions are chronic—that is, slow in yielding—and they certainly do not yield unless the application is wholly suitable to the condition present.

Next I would say that it is an error to suppose that the patient, without proper instructions, understands anything about the correct method of using the external remedies, which may be ever so well prescribed. I have so frequently dwelt on this that I must not enlarge upon it now. Many a good remedy fails of its beneficial effect from a wrong method of using, and, as I showed so strongly in my lectures last year, the mode of making applications and removing them has much to do with their success; and the patient is very likely to err in these respects, and also in the use, or abuse, of water, unless properly instructed.

A common error connected with the local treatment of diseases of the skin is the one unconsciously committed by physicians of being unduly influenced by advertisements concerning remedies which are adroitly introduced by various firms for mercantile profit. As we all know, they claim at first to be offered only to the profession, and are accompanied by printed statements making wild claims in regard to their wonderful efficacy, attested to by persons signing themselves as doctors, but generally from remote districts, and quite unknown—and possibly non-existent. I can readily understand how even a good physician, puzzled

by the obstinacy of a case, when he has thrust upon him through the mail or by skilful agents one of these much-vaunted remedies, will think it worth trying, or, rather, may try it in a case without much thinking. The last of these proprietary local remedies has been introduced and pushed in quite another method, by appealing at once to the general public, often through clever reading notices or advertisements, even on the front page of the daily press, which does not affect its relative worthlessness.

Now all these quack and semiquack applications may have their value occasionally in certain cases, for they all probably originated in some prescription written by a regular physician for some particular case for which it was suited, and which was perhaps greatly benefited thereby.

But, gentlemen, we all know that the best results of medical thinking and experience are freely given to the profession, and through them to the public; and how can it be possible that such marvelous remedies as are continually advertised should escape the knowledge and experience of those skilled in such diseases, and be so much better for every case than any which they can offer? Every one who stops to think agrees that they cannot, and yet again and again newly advertised remedies of all kinds are continually employed, even by physicians of high repute. I think the explanation is found, partly at least, in a want of proper thought, and in the blind hope that something new and valuable may have been discovered which is not yet known to the profession. And how continually both the physician and patient are doomed to disappointment, and one after another advertised remedy is discarded! But still the error is made, and I suppose will be made, for the Americans are of all peoples the most credulous, if only sufficiently bold assertions are made. Pardon this long tirade, but I so constantly see the evil effects resulting from preparations of all kinds which are impudently pushed by advertising firms, attempting to instruct the physicians in therapeutics, that I could not resist speaking very plainly.

Many errors occur in dermatological practice from the use of too strong applications, which prove stimulating and irritating when a soothing effect is desired. I discussed this so fully last year that I will not dwell on it now; but I only want to caution you again to deal very gently with the irritated and inflamed skin, beginning with the mildest measures, and increasing the strength of them as occasion requires. Zinc ointment, when made as I described in my last lecture, or a proper calamine and zinc lotion, seldom irritates, but it often proves inefficient after a while, and needs to be altered or strengthened in various ways, or supplanted by other measures: the former forms a good base for the addition of carbolic acid, salicylic acid, resorcin, ichthyol, tar, oil of cade, etc.

I cannot close this part of the lecture without mentioning to you a curious error which I recently met with in regard to the use of the solid rubber bandage, which you have frequently seen applied, often with marvelous results, in the clinic. The patient was a woman aged thirty-five, who was brought to my office by her physician with a subacute eczema of the lower legs. Along with other appropriate treatment I advised the use of the solid rubber bandage, and as usual gave very explicit directions in regard to its application and as to the method of treating the parts when the bandage was taken off at night. In a week or two they returned, claiming that the rubber bandages were not satisfactory as a treatment, and seeking for something else, the bandages being then on. On removing them I found that they had been applied *over the stockings,* as the first application directly upon the diseased surface was not thought to be pleasant. The stockings, of course, irritated the inflamed tissues, and when after they were removed I applied the bandages exactly right, all went well. I have so often demonstrated this method of treatment that I will not say more, except to caution you not to commit the error of neglecting their em-

ployment in proper cases, or of not following the exact method of procedure which I carefully detailed and demonstrated in my lectures of last year.

All of us know that errors are constantly occurring in connection with the use of *x*-rays in the treatment of diseases of the skin; but those who have watched the brilliant results obtained in many cases in this clinic during the past few years do not need to be told of their value when properly used in appropriate cases. This plan of treatment has almost passed its experimental stage, and is certainly a most valuable adjunct to our armamentarium, but it must always have its danger of burning in inexperienced hands, and no one can be too cautious in handling it. But it is an error to use it too exclusively or to expect that its range of usefulness will extend to very many affections.

Finally, I would like to mention the error of the local use of nitrate of silver as freely and recklessly as it has been employed in past years: many a slight *epithelioma* of the buccal cavity or on the face has been goaded into an active state, and increased until it became a very serious affair, solely by the free and repeated application of nitrate of silver, as I have often seen.

With your permission I will now recapitulate some of the points made in this and former lectures in a manner which I trust will be of service in impressing certain of them in your memory. I beg to call your attention to a series of "Don'ts in Dermatology." If I seem to speak rather dogmatically I trust that this will be pardoned, as I only want you to appreciate and remember some of the items which many of us have had to learn from hard experience.

DON'TS IN DERMATOLOGY.

1. Don't be too hasty in a positive diagnosis, certainly not from inspecting any single portion of an eruption; many a cutaneous disorder will present very different appearances in different localities.

2. Don't fail to examine each and every part affected, both for diagnostic and therapeutic purposes.

3. Don't forget that a patient may have several entirely distinct and different diseases of the skin at the same time, one of which may mask the other and confuse the diagnosis.

4. Don't neglect to get and keep a full written history of every case, recording symptoms at each visit, with the effect of remedies, and abbreviated copies of prescriptions given.

5. Don't fail to use a magnifying glass in observing and studying all lesions on the skin, however good the vision may be; it demonstrates details in eruptions which the naked eye overlooks.

6. Don't lose sight of the value of the microscope when there is any suspicion of a vegetable parasitic disease.

7. Don't forget that syphilis is a great imitator of many diseases of various organs, and that in most dermatological statistics it forms about one-tenth of all cases.

8. Don't fail to establish the fact clearly whether syphilis has or has not anything to do with the special case under consideration.

9. Don't exclude syphilis simply because of the absence of a venereal history, if the character of the eruption and sufficient history and other symptoms corroborate it.

10. Don't ignore the fact of the relative frequency of "syphilis in the innocent," and don't fail to search for the present or past point of entrance of the poison by means of an extra-genital chancre, when other explanation is absent.

11. Don't overlook marital infection or hereditary acquirement of syphilis, although the latter seems to be much less frequent than in years past.

12. Don't forget, in cases which are at all doubtful, to use the analytical method of diagnosis, noting down any and all eruptions which might look like the one under consideration, and then, by a process of exclusion, eliminate one after the other, until the one is found which answers all or most of the requirements.

13. Don't forget, while studying the eruption in order to establish a correct diagnosis, that the patient commonly requires to be studied also, to enable him to understand the proper basis for treatment.

14. Don't forget that to have a healthy skin the body must be healthy, and all its organs must perform their functions in a proper manner.

15. Don't forget that the urine affords an index as to how the metabolic processes are performed; also that while there may be no albumin, casts, or sugar found in it, its chemical constitution may be far from normal and indicate great metabolic errors which should be corrected.

16. Don't forget that diet and hygiene may play a very important part, as contributory causes at least, in many eruptions, and that when they are faulty treatment may be proportionately unsatisfactory.

17. Don't imagine that arsenic is a panacea for diseases of the skin; experience has shown that it has relatively little if any effect on most eruptions, although when combined with other proper treatment it does often aid in restoring vital tone to many portions of the body.

18. Don't simply give iodide of potassium when in doubt, or when a possible syphilitic nature of an eruption is suspected; if the eruption is due to syphilis it should be so diagnosticated and efficiently treated with mercury also, even to the end.

19. Don't fail in your duty to syphilitics, both in guarding against the infection of others and also in securing for them effective treatment, sufficiently prolonged, to guard them against the serious possibilities of neglected syphilis.

20. Don't attempt too much local treatment in any of the lesions of syphilis; if the disease itself is efficiently treated constitutionally, there is very little need of other than the simplest local measures.

21. Don't be too vigorous or active with local treatment in any disease of the skin, unless you are very well acquainted with the remedies employed and feel that you understand the skin of the patient well.

22. Don't forget that much distress, and often harm, is caused by too stimulating and irritating applications, and that the skin is a delicate organ, when the epidermis has been removed or profoundly altered by accident or disease.

23. Don't suppose that any of the nostrums advertised for commercial advantage can have virtues above the remedies known to the profession, and do not employ them, as is often done, simply as a ready-made article of hoped-for value; whatever is known to be of value should, of course, be used by the profession.

24. Don't try to have too many remedies or combinations of remedies: it is better to have a few tools which one knows how to handle well than to have a vast number with which one is poorly acquainted.

25. Don't use nitrate of silver too freely or too frequently on superficial sores: those of simple character can be often thus stimulated into an epithelioma of serious character.

There are many more practical points and errors in dermatological practice of which I would like to speak, did time permit. But these are enough to justify the remark of the late Sir Erasmus Wilson, in regard to eczema, which I would apply to the general treatment of diseases of the skin. It is as follows: "To be a successful practitioner in the treatment of eczema" (diseases of the skin) "a medical man must be an accomplished physician: to manage the local treatment he must be an able surgeon. . . . In a word, the highest and best qualities of medical art and science must be put in practice with foresight and discretion for the treatment of an eczema" (disease of the skin).

If I shall have aided any of you by these simple lectures, and by presenting these "don'ts" and "does" of dermatology, so that there shall be fewer errors and more success in the management of the cases of diseases of the skin which may come under your care, I shall be abundantly satisfied. Next week I hope to present some of the "Danger-signals from the Skin."

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THE RELATION OF THE PRODUCTION OF A RISE OF TEMPERATURE TO THE ACTION OF THE HEART AND THE ARTERIAL TENSION.

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When a puncture is made into the corpus striatum we have a rise of temperature to 105.5° F., which continues above normal for a few days (dotted line, Fig. 1). When a bilateral puncture is made into the tuber cinereum we have a rise of temperature to 109.5° F. (continuous line, Fig. 1). In these punctures the rate of respiration is accelerated and the volume of air inspired increased. But we have shown that the increase of volume of oxygen inspired is not necessary to the rise, as a naphthylamin compound decreasing the amount of oxygen inhaled produces a rise of temperature to 108° F. by an action on these centers. The punctures also increase the rate of the heart-beat and cause a rise of arterial tension, which returns to normal in about an hour and a half (Fig. 2).

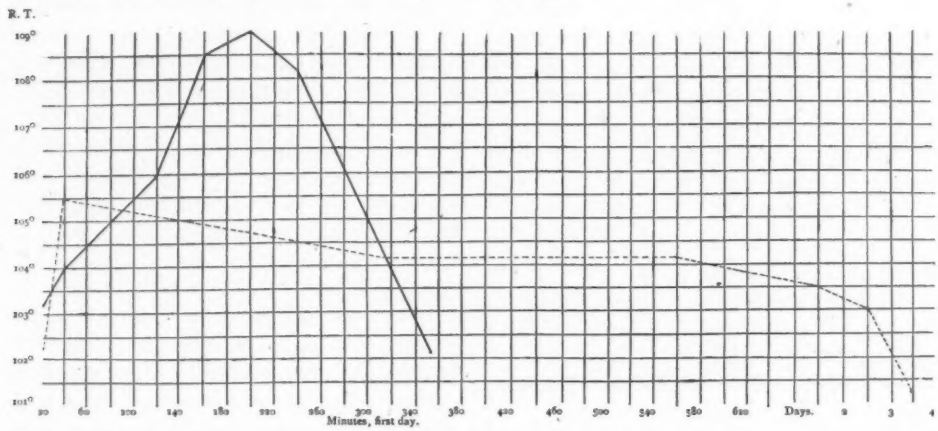

FIG. 1.—Rabbit. Dotted line represents rise of temperature from puncture of the corpus striatum. The continuous line is due to bilateral puncture of the tuber cinereum.

The question now arises, How much in the rise of temperature must be attributed to the heart and arterial tension? To estimate the effect of extreme and rapid changes in blood-pressure we employed nitrite of amyl and adrenalin—one a great vasodilator, the other a great vasoconstrictor. Nitrite of amyl lowers the arterial tension chiefly by a local action on the walls of the arterioles. In addition we tried digitalin and barium chloride. The effect of amyl nitrite on temperature was to slightly lower it, as Experiment 1 demonstrates.

EXPERIMENT 1.

Inhalations of amyl nitrite; rabbit.

P.M.			
1.55	Temperature	104°	Inhalations.
2.00	"	104.2°	"
2.10	"	104.6°	"
2.20	"	104.4°	"
2.30	"	104.8°	"
2.40	"	104.4°	"
2.50	"	104.5°	"
3.00	"	104.6°	"
3.10	"	104.7°	"
3.20	"	104.6°	"
3.30	"	104.5°	"
3.40	"	103.7°	"
3.50	"	103.6°	"

Total amyl nitrite used, 6 m.
—4° F.
All temperatures are rectal.

EXPERIMENT 2.

Inhalations of amyl nitrite; rabbit.

P.M.			
2.10	Temperature	103.6°	Inhalations.
2.20	"	103.6°	"
2.30	"	103.7°	"
2.40	"	103.8°	"

2.50	Temperature	103.9°	Inhalations.
3.00	"	103.8°	"
3.10	"	103.8°	"
3.20	"	103.5°	"
3.30	"	103.6°	"
3.40	"	103.5°	"
3.50	"	103.5°	"
4.00	"	103.5°	"

Total amyl nitrite used, 12 m.
—.1° F.

Now, this rise could not ensue from an action of adrenalin on the vasomotor center via the corpus striatum, as adrenalin elevates the tension when the vasomotor center is cut off, which I have often seen.

When a transverse section was made behind the tuber cinereum, then the temperature only rose about 0.6° F. This demonstrated that there was something in front of the section which caused the temperature to rise not 0.6° F. but 3.6° F.

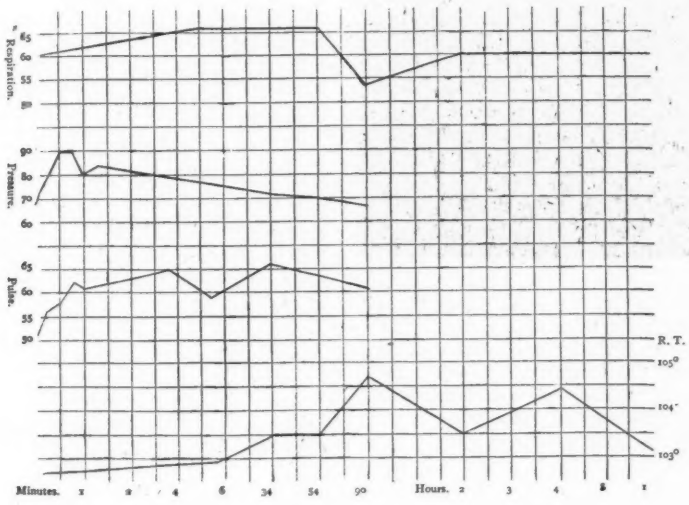

FIG. 2.—Puncture of tuber cinereum in rabbit from above.

EXPERIMENT 3.

Inhalations of amyl nitrite; white rabbit.

P.M.			
2.15	Temperature	104°	Inhalations.
2.25	"	104.5°	"
2.35	"	104.8°	"
2.45	"	104°	"
2.55	"	103.8°	"
3.05	"	103.6°	"
3.15	"	103.8°	"
3.25	"	103.8°	"
3.35	"	103.7°	"
3.45	"	103.6°	"
3.55	"	103.6°	"

Total amyl nitrite used, 12 m.
—.4° F.

Hence the lowering of blood-pressure is attended by a slight fall in temperature, due to an increased dissipation of heat from the dilated blood-vessels. A rise of temperature precedes the fall.

To increase the arterial tension we employed repeated injections of adrenalin, which produced salivation. The temperature rose to 106.6° F., as is shown in Experiment 4.

It is not due to increased supply of oxygen, as experiments with Gad's aeroplethysmograph demonstrated that the amount of oxygen inspired was diminished by adrenalin (Fig. 3).

EXPERIMENT 4.

White male rabbit; hypodermic injections of adrenalin chloride, 1:1000, *P. D. & Co.*

P.M.			
1.55	Temperature	103°	
2.00	"	103°	Injected 5 gtt.
2.10	"	103.2°	" 5 gtt.
2.20	"	103.8°	" 5 gtt.
2.30	"	104.8°	
2.40	"	105.3°	
2.50	"	105.4°	
3.00	"	105.6°	" 5 g.
3.10	"	106.2°	Salivated.
3.20	"	106.4°	
3.30	"	106.6°	
3.40	"	106.6°	
3.50	"	106.6°	

+3.6° F.

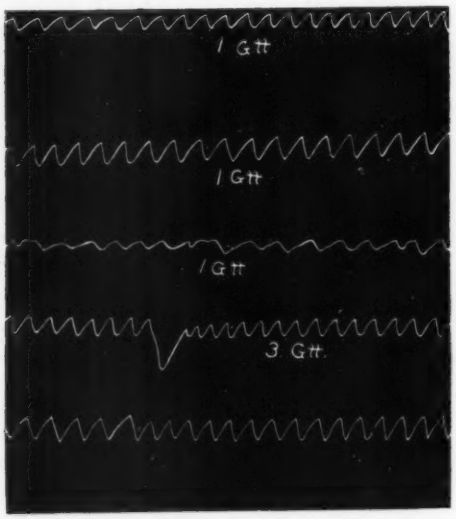

FIG. 3.—Action of adrenalin (per jugular) diminishing the volume of air inspired—lowest line normal. Tracing made with Gad's aeroplethysmograph.

EXPERIMENT 5.

Hypodermic injections of adrenalin chloride; white female rabbit.

P.M.				
1.25	Temperature	103.6°	Injected	5 gtt.
1.35	"	103.8°	"	5 gtt.
1.45	"	103.9°	"	5 gtt.
1.55	"	103.9°	"	5 gtt.
2.05	"	103.9°		
2.15	"	104.2°		
2.25	"	104.6°		
2.35	"	104.9°		
2.45	"	105.1°		
2.55	"	105.6°		
3.05	"	105.8°		
3.15	"	105.9°		
3.25	"	105.8°		
3.35	"	105.8°		

+2.2° F.

EXPERIMENT 6.

Section of brain, followed by hypodermic injections of adrenalin chloride; rabbit etherized.

P.M.				
2.00	Section of brain.			
2.05	Temperature	102.6°	Injected	5 gtt.
2.10	"	102.5°	"	5 gtt.
2.20	"	102°	"	5 gtt.
2.30	"	101.6°	"	5 gtt.
2.40	"	101.4°		
2.50	"	101°		
3.00	"	100.5°		
3.10	"	100.4°		
3.20	"	100.4°		
3.30	"	100.3°	Died.	
3.35	"	100.1°		

Post-mortem: Section through both crura cerebri.

−2.5° F.

EXPERIMENT 7.

Section of brain, followed by hypodermic injections of adrenalin chloride; white rabbit, etherized.

P.M.				
1.55	Section.			
2.00	Temperature	100.6°	Injected	5 gtt.
2.05	"	100°	"	5 gtt.
2.15	"	100°	"	5 gtt.
2.25	"	100.4°	"	5 gtt.
2.35	"	100.5°		
2.45	"	100.8°		
2.55	"	101°		
3.05	"	101.2°	Died.	
3.10	"	101°		

Post-mortem note: Section through crura cerebri, a few fibers undivided.

+.4° F.

EXPERIMENT 8.

Section of brain, followed by hypodermic injections of adrenalin; white male rabbit, etherized.

P.M.				
2.10	Section of brain.			
2.25	Temperature	103.7°	Injected	5 gtt.
2.35	"	102.8°	"	5 gtt.
2.45	"	103.6°	"	5 gtt.
2.55	"	103.7°	"	5 gtt.
3.00	"	103.7°		
3.05	"	103.7°		
3.10	"	103.7°		
3.15	"	103.7°	Died.	

Post-mortem: Section through crura cerebri.

EXPERIMENT 9.

Section of brain, followed by hypodermic, injections of adrenalin chloride; rabbit lying on abdomen and etherized.

P.M.				
2.35	Section.			
2.40	Temperature	103.3°	Injected	5 gtt.
2.45	"	103.3°		
2.50	"	103.4°	"	5 gtt.
2.55	"	103.3°	"	5 gtt.
3.00	"	103.3°		
3.05	"	103.2°	"	5 gtt.
3.15	"	103.2°		
3.25	"	103.3°		
3.35	"	103.4°		
3.45	"	103.9°	Struggling.	

Post-mortem: Everything divided anterior to corpora quadrigemina except a few fibers in left crus.

+.6° F.

Hence neither the vasomotor changes nor the diminished supply of oxygen can account for the rise of temperature. We are driven to the conclusion that adrenalin stimulates the thermogenic centers in the corpus striatum and tuber cinereum, and this increases the temperature.

Tetra-hydro-beta-naphthylamin. — This drug greatly increases the temperature, producing a rise sometimes to 108.2°

(Experiment 12). Now this drug has been shown to lower the arterial tension and to slow the heart. It does not do this by an action via the corpus striatum, for the same result ensues when a transverse section is made behind the tuber cinereum (Fig. 4). Further lowering the tension, as shown by nitrite of amyl, lowers the temperature. Hence the great increase of temperature by this drug is due to a stimulation of the thermogenic centers, for when they are cut off hardly any rise ensues (Experiment 13).

EXPERIMENT 10.

Hypodermic injections of hydro-tetra-beta-naphthylamin; rabbit.

P.M.			
1.20	Temperature	103.6°	Injected .01 Gm.
1.30	"	103.9°	" .01 Gm.
1.40	"	104.2°	
1.50	"	104.6°	
2.00	"	104.9°	
2.10	"	105.2°	
2.20	"	105.5	
2.30	"	105.8°	
2.40	"	106°	
2.50	"	106.2	
3.00	"	106.4°	
3.10	"	106.4°	
3.20	"	106.4°	
3.30	"	106.2°	

+2.6° F.

EXPERIMENT 11.

Hypodermic injections of hydro-tetra-beta-naphthylamin; white female rabbit.

P.M.			
1.20	Temperature	103.6°	Injected .01 Gm.
1.30	"	103.9°	" .01 Gm.
1.40	"	104.2°	
1.50	"	104.6°	
2.00	"	104.9°	
2.10	"	105.2°	
2.20	"	105.5	
2.30	"	105.8°	
2.40	"	106°	
2.50	"	106.2	
3.00	"	106.4°	
3.10	"	106.4°	
3.20	"	106.4°	
3.30	"	106.2°	

+2.6° F.

EXPERIMENT 12.

Action of tetra-hydro-beta-naphthylamin; white male rabbit.

P.M.	Temperature.	
2.10	102.5°	Injected .01 Gm. per jugular.
2.20	102.8°	
2.25	102.9°	
2.30	103.1°	Injected .005 Gm.
2.40	103.5°	
2.45	103.8°	

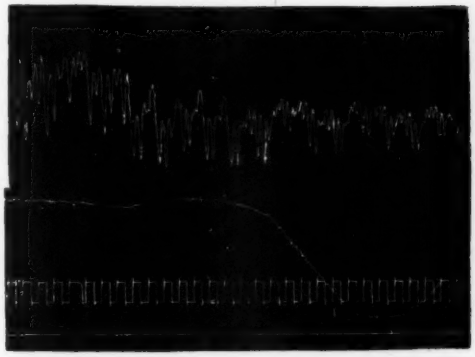

FIG. 4.—Highest line shows the primary action of tetra-hydro-beta-naphthylamin on the heart. Second line from the top shows the secondary action—a lowering of blood-pressure and rapid action of the heart (drug given per jugular).

P.M.	Temperature.	
2.50	104.2°	
2.55	104.5°	
3.00	105°	
3.05	105.2°	
3.20	105.8°	
3.30	106°	
3.35	106.2°	Injected .005 Gm.
3.45	106.5°	
3.50	107°	
3.55	107.3°	
4.00	107.5°	
4.15	107.7°	
4.20	107.8°	
4.25	107.9°	
4.30	108°	
4.35	108.2°	Rabbit dead.

+5.7° F.

EXPERIMENT 13.

Injections of tetra-hydro-beta-naphthylamin; rabbit.

P.M.		
2.55	Transverse section of brain behind the tuber cinereum.	
	Temp.	
3.00	103.3°	.005 Gm. per jugular.
3.10	103.3°	.005 Gm. per jugular.
3.20	103.5°	.005 Gm. per jugular.
3.25	103.5°	.005 Gm. per jugular.
3.30	103.6°	
3.35	103.7°	
3.40	103.8°	.005 Gm. per jugular.
3.50	104°	.005 Gm. per jugular.
3.55	104°	
4.00	104°	
4.05	104°	.005 Gm. per jugular.
4.15	104°	
4.30	104°	.005 Gm. per jugular.
4.40	104°	.005 Gm. per jugular.
4.45	104°	

+.7° F.

Irritation of a Sciatic Nerve.—We irritated the central end of the cut sciatic for half a minute at intervals of five minutes.

The blood-pressure is elevated by this procedure, but the rise of temperature was only 1.8° F.

EXPERIMENT 14.

Irritation of sciatic nerve; white rabbit.

P.M.			
2.00	Temperature	101°	Irritation.
2.10	"	101.2°	"
2.20	"	101.4°	"
2.30	"	101.6°	"
2.40	"	101.8°	"
2.50	"	102°	"
3.00	"	102.1°	"
3.10	"	102.1°	"
3.20	"	102.2°	"
3.30	"	102.3°	"
3.40	"	102.4°	"
3.50	"	102.6°	"
4.00	"	102.8°	"

+1.8° F.

Digitalin.—This increased the temperature 1.4° F.

EXPERIMENT 15.

Hypodermic injections of digitalin; white rabbit.

P.M.	Temp.	
2.20	101°	Injected 1/200 gr.
2.30	101°	Heart-beat, 185; respiration, 72.
2.40	101°	
2.50	101°	Heart-beat, 182; respiration, 70.
3.00	101°	Injected 1/200 gr.
3.10	101.2°	
3.20	101.4°	
3.30	101.5°	Heart-beat, 180; respiration, 60.
3.40	101.6°	
3.50	101.7°	
4.00	101.8°	Heart-beat, 185; respiration, 65.
4.10	102.°	
4.20	102.2°	
4.30	102.4°	
4.40	102.4°	Heart-beat, 180; respiration, 60.

+1.4° F.

Barium Chloride.—This agent also increases blood-pressure. The rise in temperature was only .2° F.

EXPERIMENT 16.

Hypodermic injection of barium chloride.

P.M.			
2.20	Temperature	103.8°	Injected 1/40 gr.
2.30	"	103.8°	
2.40	"	103.8°	
2.50	"	103.8°	
3.00	"	103.9°	
3.10	"	103.9°	
3.20	"	103.9°	
3.30	"	104°	
3.40	"	104°	
3.50	"	104.1°	
4.00	"	104.1°	
4.10	"	104°	
4.20	"	104°	

+.2° F.

All these experiments demonstrate that vasomotor variations of arterial tension cannot elevate the temperature beyond a rise of 1.8° F., nor depress the temperature below .6° F. The increased supply of oxygen in the puncture experiment is not necessary to the rise of temperature, as has been shown by experiments with tetra-hydro-beta-naphthylamin, which produces an enormous rise of temperature and at the same time reduces the supply of oxygen. We are driven to the conclusion that when the tuber is punctured and a rise of temperature to 109.5° F. ensues in three hours, it must be due to an excitation of the tuber which is connected with the trophic centers in the anterior horns of the spinal cord, and thus increases the

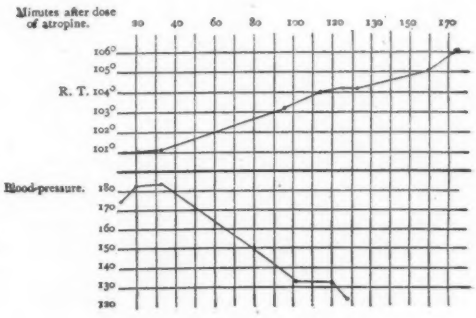

FIG. 5.

temperature. With a dental drill, guarded by a cross-bar, I have several times penetrated the roof of the mouth in the rabbit and irritated the tuber cinereum. The animal fell dead at my feet. A thermometer inserted showed within five minutes a rise of temperature to 110° F. Here there is a veritable explosion of heat production. Neither circulatory nor respiratory variations can account for it, as they have been suddenly arrested.

Because a thermal nerve cannot be demonstrated is no argument against thermogenic centers, for no one can demonstrate a sudorific nerve in the sciatic.

Punctures of the thermogenic centers produce a rise of temperature by increasing the production of heat and not by diminution of heat dissipation.

EDITORIAL.

THE VALUE OF SPINAL ANESTHESIA.

In the Original columns of the THERAPEUTIC GAZETTE more than one article has appeared recently in which excellent results have followed the employment of lumbar puncture and the injection of a local anesthetic in place of ether, chloroform, or chloride of ethyl by inhalation for the purpose of relieving pain when performing a surgical operation. Our own feeling in regard to this interesting procedure has always been that it must have a very limited range of usefulness, and that the surgeon should regard it as one of the things which can be done in cases which are so hedged about with difficulties that ordinary anesthetic procedures cannot be resorted to. Many years ago we heard a celebrated lecturer upon drugs assert that at some future time an anesthetic which could be taken by inhalation, as ether and chloroform are taken, would ultimately be invented which would relieve pain without destroying consciousness, and he spoke of this as a much-to-be-desired result. Increasing experience, however, has taught us that one of the most beneficent effects of ether and chloroform is the fact that they produce unconsciousness, for there can be no doubt whatever that where unconsciousness is not produced during the performance of an operation the dread and mental misery of the patient are not only distressing but materially aid in the production of surgical shock. This same objection holds in regard to the employment of spinal anesthesia, and we have repeatedly seen it tried in cases of severe cardiac disease with the result that the patient not only became frightened but cyanotic, and when a general anesthetic was administered to remove consciousness as a factor in the case, the condition of the circulatory system at once improved.

Our attention is called to this matter once more not only by the articles which we have named, but also by a very valuable summary of this subject which is contributed by Clark to *Progressive Medicine* for June, 1907. He calls attention to an article by Baisch, who has used this method of spinal injection in a large number of gynecological cases, and who points out that the area operated upon is one which makes spinal anesthesia particularly suitable. Indeed, theoretically, spinal anesthesia should become the sovereign method of anesthesia in gynecology. As Clark points out, however, from a practical standpoint, there seems to be little general disposition on the part of the gynecologist to resort to this method, not only for the reasons which we have already given, but also because female patients are as a rule favorable subjects for inhalation narcosis in that they are not accustomed to the use of alcohol and are not so frequently sufferers from myocarditis and cardiac dilatation. In gynecology it has been found that in severe radical operations, as, for example, for carcinoma uteri, where the procedure must last for an hour or longer, the maintenance of consciousness is decidedly disadvantageous, and the placing of a patient in the Trendelenburg posture when consciousness is preserved is not only cruel but almost impossible for so long a period.

The occurrence of headache and vomiting after spinal anesthesia have been urged as distinct disadvantages, equal to those following the older forms of inhalation narcosis, but Baisch asserts that these accidents have been due entirely to excessive doses. On the other hand, other observers have concluded that these disagreeable symptoms are quite as frequent even when the dose is carefully guarded and very small. It would seem probable, too, that the best results are obtained if at the same time the lumbar puncture is performed the patient also receives a hypodermic injection of scopolamine and morphine.

Some of the measures which are re-

sorted to by those who employ spinal anesthesia are so cumbersome and remarkable that American surgeons will scarcely be inclined to follow them, and that the method sometimes fails to some degree is proved by the fact that many of the continental practitioners are in the habit of administering a few whiffs of ether or chloroform toward the close of the operation to make the condition of the patient more bearable. The application of mufflers over the ears to prevent the patient being annoyed by sounds in the operating-room and the employment of blinders to restrict vision, either entirely or so far as the field of operation is concerned, requires the use of so much paraphernalia as to materially increase the mental shock of the patient. We venture to say that there are few physicians who, if they had to submit themselves to operation, would be content not only with the maintenance of complete consciousness but to have all connection with the outside world cut off by blinders and ear-tabs, resigning themselves to any procedure which the surgeon might think advisable at the moment.

IS TOBACCO SMOKE POSSESSED OF ANTISEPTIC PROPERTIES?

There is a very prevalent idea in existence among the laity, and to some extent in the minds of members of the medical profession, that the smoking of tobacco, during or after exposure to those infectious diseases which find their entrance into the body through the respiratory passages, distinctly diminishes the chance of infection. We therefore have read with a great deal of interest an article which has been published in the London *Lancet* of May 4, 1907, by Dr. Arnold, of Manchester, England, who has carried out a research with the object of reaching some conclusion in regard to this matter. Arnold points out that a bactericidal power in tobacco smoking is supposed to exist by many practitioners. He therefore carried out a series of investigations to determine whether the smoke of tobacco had any more protective influence than some of the other forms of dried vegetable matter which did not contain toxic organic bodies, and he selected ordinary hay as a control for his experiments. He found that the smoke of both hay and tobacco possessed distinct bactericidal power. The organisms tested were the bacillus of diphtheria, typhoid fever, the colon bacillus, and also the staphylococcus pyogenes aureus, and on one occasion the streptococcus isolated from the blood of a case of scarlet fever. All of the experiments with the exception of those upon the streptococcus were repeated five times, and different grades of tobacco were employed, from cheap navy cut to one of the more expensive mixtures. No difference in the activity of these various grades of tobacco was noticeable. About one-twelfth of an ounce of tobacco was used in each experiment, and the exposure lasted for five minutes. He found that the bacillus of diphtheria was always markedly affected. Sometimes it failed to grow at all after the exposure to tobacco smoke, and sometimes there was a slight growth. This occurred when this bacillus was exposed to either the smoke of tobacco or hay. On the typhoid bacillus the smoke from hay seemed to exercise more effect than the smoke from tobacco. The same fact held true to some extent with the colon bacillus. The staphylococcus was scarcely affected by tobacco smoke and but slowly affected by hay smoke. Curiously enough the streptococcus seemed to be completely destroyed.

Arnold therefore believes that tobacco smoke drawn into the mouth is very probably detrimental to the growth of some pathogenic organisms, but not more than the smoke from other sources, and he quotes a research made by Tessinari, who reached similar conclusions after passing tobacco smoke over cultures of various pathogenic germs, such as those of Asiatic cholera and pneumonia. This investigator also found that tobacco smoke passed through water killed the "yellow bacillus." Trillat believes that the antiseptic influence of the smoke depends upon the presence of formaldehyde, since he found that 100 grammes of tobacco yielded 0.063 gramme

of formaldehyde, and that some cigars gave as much as 0.118 gramme in 100 grammes of tobacco.

This research of Arnold's is, we think, of very considerable interest to those practitioners who are in the habit of commonly using "the much-abused weed," but the author is evidently afraid that he may be attacked by the antitobacco party, for he somewhat quaintly observes that while he believes that tobacco smoke is detrimental to the growth of germs he desires to make it clear that he states this fact as an observation and not as an argument in favor of the use of tobacco.

THE ENTRANCE OF AIR INTO THE VEINS.

Readers of the THERAPEUTIC GAZETTE will remember that from time to time we have published in these columns facts which have been developed in regard to the effect which is produced by the entrance of air into the veins. For many years it was universally taught by teachers of surgery that air embolism is an exceedingly fatal accident, and it was not until about twenty years ago, when investigations were published by Dr. Senn and the writer, that any serious doubt was thrown upon the actual danger of such an accident. At that time both Senn and the writer proved conclusively that the introduction of large quantities of air into the veins of animals comparatively rarely produced fatal results. Our attention is called to this matter once more by a communication to the London *Lancet* of May 4, 1907, by Dr. Whiteford, of Plymouth, England, who asserts that he has repeatedly noticed the entrance of air into a vein during operations on the neck without the slightest ill effect on the patient, and has also seen air bubbles injected with saline solution during intravenous injection without any evil effects, a fact which we ourselves have repeatedly noticed. As Whiteford points out, the mere development of a hissing noise may be due to the passage of air to strands of muscle and not to the actual entrance of air into a vein. We think that there can be no doubt of the fact that the entrance of very large quantities of air into the vein of a human being may produce death, and Delore and Duteil hold that when death occurs it does not arise simply from obstruction in the pulmonary capillaries, but from distention on the right side of the heart, and so they suggest aspiratory puncture of the right ventricle, which they assert is without risk. Whiteford also advocates the passage of a fine trocar and cannula into the heart cavity, and further suggests, if an ordinary aspirator is not at hand, that a cannula, attached to a piece of rubber tubing, be pushed into the ventricle and direct suction made by the mouth of the operator associated with the performance of artificial respiration. This rather heroic measure may be necessary in desperate cases, but it would seem that the remedy is almost worse than the condition which it is designed to relieve.

THE USE OF ATROPINE AND STRYCHNINE IN THE TREATMENT OF THE MORPHINE HABIT.

Those readers of the THERAPEUTIC GAZETTE who have been accustomed to peruse its pages for a number of years will doubtless remember that on several occasions interesting articles have appeared in its columns in which the treatment of the morphine habit by the use of hyoscine has been described. Within the last few months a number of papers have appeared in English journals in which in place of hyoscine a method has been described in which atropine and strychnine are employed. It is claimed by the employment of these two drugs that the patient can be rapidly deprived of his morphine or it can be stopped immediately after he comes under careful observation and restraint. It seems to us that in the majority of instances strychnine is unnecessary, since it would tend to produce a condition of nervous irritability in a person who was deprived of a sedative such as morphine, because in our experience the evidences of circulatory failure are rarely sufficiently marked to require its use. Then, too, it

would seem probable that the method of employing hyoscine in large doses is more rational than the English method of employing atropine, for while the two drugs are very nearly related, their physiological action is distinctly different, both in kind and degree, the hyoscine being infinitely more sedative than the atropine, which, when given in full doses, may in some instances, as is well known, produce a very active, talkative delirium which may be almost maniacal in its character. Neither drug is especially poisonous so far as the lethal influence of the remedy is concerned, and so it cannot be said that one drug is preferable to the other in regard to safety. Certainly, the soporific effects which are exercised by hyoscine in these cases are very distinctly advantageous, and furthermore hyoscine does not, when given in large doses, produce the great dryness of the mouth and the arrest of the other secretions which is so characteristic of the full physiological action of atropine.

THE VALUE OF SALINE INFUSION IN CHLOROFORM NARCOSIS.

Many years ago it was proved conclusively that chloroform is primarily and constantly a depressant to the vasomotor system, and, except for a very slight rise of arterial pressure which develops when it is first administered, which is due to nervous excitement rather than to the action of the drug, it produces a persistent fall of arterial pressure which is in direct ratio with the quantity of the drug inhaled. It has also been proved that this effect is largely due to depression of the vasomotor center; that the respiratory center is also depressed by the drug; and if chloroform is taken too freely, or administered in too concentrated a form, it acts as a direct depressant to the cardiac muscle. In view of the fact that many of the grave accidents which ensue during surgical operations are due to vasomotor palsy, it is manifest that chloroform, while it may be exceedingly useful in some cases, should not, except under certain circumstances, be employed in all cases for the purpose of developing surgical anesthesia. We think it has been pretty well decided by experimental research and by practical experience that the administration of atropine prior to the use of chloroform very distinctly increases the safety of the patient by its stimulant influence upon the vasomotor nerves, but we do not think that the simultaneous administration of morphine possesses similar advantages. So, too, there can be little doubt that the use of strychnine, simultaneously with the use of chloroform, increases the safety of the patient. Whether it is capable of doing good after the chloroform has produced its depressant influence upon the vasomotor center is open to question.

In *La Presse Médicale* of June 1, 1907, there is an article by Romme in which is discussed the value of saline infusion in chloroform narcosis, and in which he quotes the results which have been obtained by Burkhardt in the Surgical Clinic and Pharmacological Institute at Würzburg. Burkhardt thinks that not infrequently chloroform tends to produce a certain degree of albuminuria, and that the administration of a normal salt solution by infusion under the skin, or into a vein, diminishes the chance of renal irritation by increasing the flow of urine, and also that it distinctly augments the tolerance of the patient to the drug. Thus, he found that while death occurred in an animal seventeen minutes after the inhalation of 16 cubic centimeters of chloroform, a similar animal which had been transfused with normal saline did not succumb when 30 cubic centimeters of chloroform were given over a period of thirty minutes. Burkhardt believes with Tissot that the danger of chloroform narcosis depends largely upon the fall of arterial pressure which it produces, and that the infusion of normal salt solution actively combats this tendency to a lowered tension. As a result of his experiments upon animals he is now in the habit of administering, a quarter to a half-hour before the operation, an intravenous injection of from a pint to a quart of 0.7-per-cent solution of sodium chloride. Never, after such an infusion, has he met with an accident. The

temperature of the patient is maintained, the pulse is good throughout the period of operation, and postanesthetic accidents or disagreeable symptoms, such as headache, nausea, and vomiting, are never met with.

While we have no doubt that this method is distinctly valuable and that it is of use for flushing the kidneys and for maintaining the patient's strength, we doubt very much whether it materially modifies arterial tension, since it is well known that many pints of normal salt solution can be injected into the blood-vessels without raising pressure, the vessels dilating as fast as the fluid runs in. On the other hand, it is possible, if a carefully prepared saline infusion is employed which contains calcium chloride and other substances which are stimulating to the heart muscle and the muscles of the blood-vessels, for the solution to exercise a distinct stimulant effect. In other words, we reiterate what we have so often asserted in these pages, namely, that Locke's modification of Ringer's formula should be employed. There is no reason why this should not be used in view of the fact that these salts are now placed on the market in tablet form so that the solution can be readily prepared; or, better still, a concentrated sterile saline solution is found on the market of such a strength that one ounce of it when added to a quart of pure water makes a saline solution which possesses all the advantages which we have named.

POSTOPERATIVE TREATMENT.

Gibbon (*Annals of Surgery,* August, 1907) admirably epitomizes the tendency of the present day, which is not only toward a neat, expeditious, and complete operative procedure, with major consideration for the restoration of the patient to complete health and bodily activity, but also keeps clearly in view such questions as judicious preparation, careful selection of the anesthetic and the anesthetist, and an after-treatment so planned as to minimize discomfort and suffering.

He mentions with condemnation a practice, now fortunately rare, of sacrificing the patient's interest to the convenience of the clinic, by keeping him under an anesthetic before the operator and assistants are ready to begin their work, and warns against unnecessary exposure of the body, or chilling, or wetting the patient's clothing with antiseptic solutions, or placing the patient in such position as may induce postoperative palsy.

As to the anesthetic, he strongly advises a choice in accordance with the patient's general condition, implying at times, when local infiltration is not applicable, the morphine, chloride of ethyl, scopolamine, and ether sequence. Morphine, chloride of ethyl, and ether is the usual sequence. He cautions against rough handling of tissues, ligation *en masse,* and sutures tied so tightly as to make undue tension. Morphine he uses habitually in operations, stating that he has never done an abdominal section without administering a hypodermic of this drug and atropine before the patient has recovered consciousness, nor has he ever observed in a single case a bad effect. He gives a single hypodermic of morphine ¼ grain, and atropine 1/150 grain, before anesthesia is started, or certainly before the patient regains consciousness. The patient passes from the sleep of the anesthetic, and gets comfortably over the most distressing hours after operation, when ether is being eliminated by the lungs in large quantities and nausea and vomiting are common.

The idea that morphine causes vomiting after operation is absurd. Indeed, finding the vomiting in the abdominal cases in which this plan was used much less than the cases in which it was not used, and the patient infinitely more comfortable and return to consciousness more quiet, Gibbon now gives the hypodermic after any operation of magnitude or long duration, or where he expects much after-pain. He prefers to give the drug before or during anesthesia. Thus the patient will not learn the comfort which comes from it. The pain which develops some hours after operation he does not consider should be treated by the administration of an anodyne. Here there is some cause in or about the wound

or the dressings which should be sought for and removed. The lessened nausea and vomiting after operations Gibbon attributes to improved methods of administering anesthetics, first, and secondly to the lessened quantity given—indeed, he states that by employing chloride of ethyl first the amount of ether administered to a patient is reduced nearly one-half. Inhalations of vinegar have seemed to him to be productive of some good in lessening postoperative vomiting, and at times a draught of water will have a distinctly sedative effect, as will a change of posture. Elevation, for instance, to the sitting position will relieve nausea. This is particularly true after operations on the stomach itself. Thirst, if it cannot be largely relieved by giving large quantities of salt solution by the rectum, is assuaged by the administration of water by the mouth, an ounce at a time. Liquid food is administered as soon as the patient desires it, or as soon as nausea has passed away. Any movement which does not directly interfere with the healing process of the wound should be allowed. A properly closed abdominal wound is in no way injured by placing the patient on his side. Indeed, a consistent effort should be made to secure for the patient the most comfortable posture.

In regard to postoperative catheterization, advice is given not to resort to this procedure unless the bladder is painfully distended, and since difficulty in micturition is often incident to decubitus Gibbon is inclined where this seems the causative factor to allow patients to get out of bed, unless the position or the extent of the operative wound absolutely contraindicates this. The intestines should be allowed to rest quietly after operation, and this especially holds in such cases as have been given adequate preoperative treatment—*i.e.*, in those whose bowels have been well cleared. On the third day a movement is secured by a glycerin suppository, or an oil or soap-suds enema.

As to the time at which the patient is allowed to get out of bed, this should be accomplished with old people at the earliest possible moment. In simple appendectomies, when the abdominal wound is closed and no muscle cut across the fibers, Gibbon gets his patient out of bed on the eighth or ninth day with the abdomen well supported by a binder, and allows moving about on the tenth or eleventh day. He advises careful consideration of the patient, since while there are many who are benefited by a long rest in bed, there are others, such as old people, and those who are inclined to magnify their ailments, made worse by confinement.

Gibbon also calls attention to the need of after-treatment, especially the hygienic, in order to completely restore to health the patient, or as nearly reach this end as lies within the power of the surgeon.

In commenting upon Gibbon's contribution, Deaver, who believes in straight ether anesthesia and the avoidance of medicine, holds that the administration of oxygen markedly lessens nausea and that a careful nurse is of more moment than a hypodermic of morphine. Deaver encourages his patients to get out of bed early; especially are cases of hysterectomy gotten out in a week and advised to turn on their side early. Deaver holds that thus the danger of phlebitis is greatly lessened. He always allows his patients to get up to pass urine in case this be needful, since worse results than are made possible by this come from catheter cystitis.

Rodman corroborates Gibson's observation regarding morphine, though he is not in favor of its administration as a routine measure. Cancer patients, he states, should be gotten out of bed in forty-eight hours, even when this involves the abdominal viscera. As to enterostomy for cancer of the stomach, the patient should be sitting up on the day following operation.

Harte accentuates the fact that early postoperative feeding is unquestionably a great error, as food introduced too soon only ferments and causes an immense amount of discomfort. As a rule patients are much better for waiting twenty-four to forty-eight hours. Even then, if there is a question of irritation of the stomach, nourishment can be furnished by the bowel.

Roberts holds that postoperative back-

ache is not due to the operation itself, but is usually caused by the flat operating table on which the patient lies during anesthesia and operation. He therefore has a hard pad on the table under the lumbar region of the patient, the table being made to fit the curves of the back so that the muscles and ligments may not be strained. For eighteen years he has given before almost all operations a quarter of a grain of morphine and one one-hundred-and-fiftieth of a grain of atropine hypodermically, nor has he found it to hurt the patient. He believes the curse of thirst should be avoided by all sensible surgeons, and strongly condemns the unnecessary torture thus induced, believing that water can do no harm.

The views thus expressed by Gibbon and his commentators represent, with minor and personal differences, those generally held by American surgeons. They are based on common sense and humanitarianism and are justified by experience. Their adoption has greatly extended the usefulness of the surgical field by robbing operation of its major terrors.

THE OPERATIVE INDICATION IN GASTRIC CARCINOMA.

In an elaborate article based on hundreds of cases, most of them original, Nyrop (*Archiv für klinische Chirurgie,* lxxxii, H. 4) proves again the now generally accepted dictum that symptoms of cancer of the stomach are simply those of pyloric obstruction, and that obstruction from any cause may be characterized by identical symptoms, with hydrochloric acid deficient and lactic acid present. Moreover, non-obstructive cancers are often symptomless.

Nyrop holds that operation is imperative when the remains of food are habitually found in the stomach twelve hours after eating, or when there is a palpable tumor. In all cases of chronic and persistent delayed digestion not cured by internal treatment the operation should at least be considered.

The diagnosis between ulcer and cancer is complicated by the frequency with which a cancer develops on an ulcerative base. The age incidence of cancer and ulcer corresponds closely (thirty to fifty-five years). Emaciation is an expression of lost motility or obstruction, and is dependent upon the position and extent of the lesion and not its nature. Even the long-standard test of hydrochloric acid is no more to be depended on, since this acid is absent in a number of gastrointestinal affections and is habitually subnormal in many healthy persons. Indeed, Seidelin found free acid constantly absent in 40 per cent of persons over fifty. Lactic acid is simply a sign of retention fermentation.

Hematemesis may occur in cancer, ulcer, or hepatic disease, or even with no demonstrable lesion. Coffee-ground vomit and palpable tumor have a certain diagnostic value, but they occur too late to be of practical service.

The only possible early diagnosis is that of obstruction. The nature of the obstruction must be determined by an operation.

Nyrop distinguishes between functional and organic obstruction, holding that symptomatically the two affections can be differentiated by a certain intermittence of symptoms in the former case. Nor are apparently functional or spasmodic cases so benign as to be relegated entirely to conservative treatment. They may complicate ulcer or cancer, or may in themselves induce a sphincteric hypertrophy leading to organic obstruction, dilatation, and atony of the stomach; or by interference with the blood supply, from pressure on the vessels, causing ulceration. Tetany may develop as a complication of a functional pyloric narrowing. In view of these dangers Nyrop does not hesitate to advise exploratory operation in every case of pyloric obstruction, whether it be due to pylorospasm or to valvular obstruction with or without associated gastroptosis, since the symptoms of these conditions are completely relieved by gastroenterostomy. The relatively favorable results of operation on pyloric cancer as compared with those of intervention for the relief of malignant infiltration of other parts of the stomach are attributed entirely by Nyrop to the fact that in the former case obstructive symptoms lead earlier to operation.

Nor could he cite a more striking instance of the symptomless course of non-obstructing gastric carcinoma than that of Mikulicz, who accidentally discovered his own cancer while palpating his abdomen, but not till it had attained a growth that made it inoperable.

Nyrop concludes his paper by urging a test for gastric retention in all stomach disturbances. The test he prefers is that of Bourget. The patient is given a meal of bread, meat, and eight to ten cooked plums at 8 P.M., and at 8 the next morning the stomach is carefully washed out. Unless there be gastric retention no food remains will be found in the washing.

For the determination of the effect of posture on retention the plum bread and meat breakfast is given at eight in the morning, the patient thereafter walking about and taking his meals as usual, but not plums. At eight in the evening the stomach is washed out, and if the remains of plums are found the diagnosis of obstruction is assured.

Nyrop's conclusions are in general accepted by those who have made the most careful medical and surgical study of gastric carcinoma. It remains to be proven, however, that his dictum to the effect that every one who has chronic stomach trouble should be given plums, and that if these plums or parts of them can be recovered by the tube in twelve hours section should be performed, is subject to so few exceptions as to make it a safe and wise working rule.

EXPERIMENTAL PARTIAL OCCLUSION OF ARTERIES.

A rapid occlusion of certain arteries—for instance, the carotid, renal, mesenteric, femoral, or aorta—so inevitably in some cases, or frequently in others, leads to disaster that the attention of the surgeon has long been directed to accomplishing a gradual closure by means of which opportunity might be given for the gradual establishment of a collateral circulation, as in the case of the carotid, the femoral, and the aorta.

With this end in view Halsted and Sowers have conducted a series of experiments upon dogs by which they illustrate that aluminum bands so applied as not to occlude the lumen of the vessels may remain in place on the arterial wall in the case of the aorta, femorals, carotids, and renals for months without causing macroscopic injury to the vessels. Such bands can be removed at any time, and probably without risk of subsequent dilatation of the arterial wall; or they may be tightened at a second operation and the lumen totally occluded.

Although the intima beneath the occluding band is drawn into folds longitudinally, adhesions between these folds have rarely been found. The vessel wall can be easily smoothed out and the full lumen reëstablished. When the bands have been rolled tightly enough to completely interrupt the circulation the vessel wall, inside the band, atrophies, but hemorrhage is invariably prevented by the formation of enveloping connective tissue. Complete thrombosis of the vessel wall when a partially constricting band has been applied is not observed.

Halsted and Sowers propose the application of such bands in place of ligature of the internal or common carotid. Occlusion may be produced gradually, and should cerebral symptoms develop the band may be removed. They believe that aneurism of the aorta may be treated by making a partial or progressive occlusion of the aorta above the aneurism; that the band is possibly safer than the ligature in calcareous areas; that in certain cases of rupture of diseased thoracic or abdominal aorta a metal band might be used to close the rent.

In five human beings these bands have been put on the common carotid on one side coincident with ligation of all or most of the branches of the external carotid on both sides, for starvation of inoperable malignant neoplasms involving the face and upper part of the neck and jaws.

Dr. Halsted has also successfully applied the band to the innominate artery in the treatment of subclavian aneurism.

In this relation it is interesting to note that Jordan (*Archiv für klinische Chirurgie*, Bd. lxxxiii, H. 1), working more crudely

along similar lines, proposes a forty-eight-hour preliminary occlusion of the carotid to test the effect of its ligation and excision. This procedure was suggested by the necessity of carotid resection arising in the course of an operation for recurring primary sarcoma of the neck. Under local anesthesia two days before his second operation Jordan exposed the carotid artery, wrapped it about with iodoform gauze, and then around this iodoform wrapping tied a ligature just tight enough to stop the temporal pulsation. This procedure being attended by no disturbance of any kind, he proceeded to his formal operation forty-eight hours later. First he removed this ligature and iodoform packing, whereupon pulsation was immediately restored to the temporal artery. The internal carotid, pneumogastric, and sympathetic nerves were resected. Nor did the patient afterward exhibit brain symptoms; he lived five months, later dying of symptoms which strongly suggested that the tumor originally diagnosed as primary in the neck was in reality secondary to a laryngeal growth.

Jordan's procedure has little to commend it, barring its principle, which is much better applied by the aluminum plates devised by Halsted and Sowers.

In so far as laboratory experiments are to be depended upon, the method of gradual occlusion promises to render inestimable service in some cases of vascular lesions which hitherto have been beyond surgical help.

REPORTS ON THERAPEUTIC PROGRESS.

FUMING INHALATIONS IN ASTHMA.

Folia Therapeutica, a new English journal, for April, 1907, contains an article by SAWYER in which he tells us that for many years he has prescribed the following fuming inhalation for many of his bronchially asthmatic patients, with remarkable therapeutic success:

℞ Potassii nitratis, ℥ss;
Pulv. anisi fruct., ℥ss;
Pulv. stramonii fol., ℥j.
M. ft. pulv.

As to the way of using it. A thimbleful of this powder placed upon an earthenware plate is pinched by the fingers into a pryamidal shape, and lighted at the top of the little conical heap. It burns with a smoldering and gently deflagrating flame, and is held near and beneath the patient's face, who breathes in the smoke as it issues from the burning heap of powder. The ingredients of the powder should be dry, well mixed, and finely powdered.

This method of treating the painful difficulty of respiration which arises in bronchial asthma is very marked in its good effects, in most of the cases in which it is properly employed. The inhalation of the pungent and soothing smoke of the burning powder appears to produce several good results, namely, it allays bronchial irritability and spasm, promotes copious and free expectoration, and gives relief, *tute, cito, et jucunde,* to the distressful dyspnea. Such therapeutic indications are important, and often imperative. In busy practice we are called upon often to give relief of this kind. For such help the patient presses urgently; want of breath is one of the most urgent of human needs; the patient's anguish—and no anguish is like unto it—is a mixed result of the physical and of the psychical, of his material necessity and of his mental alarm, of what he feels and of what he fears. As sound therapeutists we cannot expect the use of fuming inhalations in asthma to be much more than palliative, but this indeed is much. For fuller treatment of the disease and of the subject of it—that is to say, for the reduction of the frequency and of the severity of the asthmatic attacks, and for their abolition, if in a particular case it may be—many other resources of the physicians' art have

efficacy; for example, in the several directions of medicinal, dietetic, climatic, hygienic, respiratory, and gymnastic therapeutics. Of course, these must be variously selected and variously combined according to the idiosyncrasies of individual patients, as ascertained by competent examination and as determined by competent experience and skill. In asthma, as in all disease, each patient is a law unto himself, and he who can read that law the best is the sufferer's best physician.

As a variant of the powder, of which the writer has just given the formula, one may prescribe another containing lobelia, black tea, and oil of eucalyptus. Here is such a prescription:

℞ Potassii nitratis, ʒss;
Pulveris stramonii fol., ʒj;
Pulveris anisi fruct., ʒij;
Pulveris lobeliæ inflat., ʒj;
Pulveris fol. theæ sinensis nig., ʒj;
Ol. eucalypti, min. xv.
M. ft. pulv.

Or, when and where the pungent fumes of sulphur in combustion may be indicated:

℞ Potassii nitratis, ʒss;
Sulphuris sublim., ʒss;
Pulveris anisi fruct., ʒiijss;
Pulveris stramonii fol., ʒj.
M. ft. pulv.

Far away from a pharmacy one might wish to extemporize a reliable fuming inhalation. A mixture of one part by weight of saltpetre and two parts of black tea, powdered, makes a good asthma powder for burning for emergency use, and both these ingredients are usually to be found as household possessions.

The writer has devised two other variants of the fuming inhalation, of a milder kind than those already detailed in this paper, which will be found useful in the management of some of those catarrhal bronchitic cases which manifest dyspneal tendencies of the slighter kind. One is produced by making spills of blotting-paper and soaking them in the compound tincture of benzoin for a few minutes; these are set aside to dry. One of the dried ones should be lighted, the flame blown out in two or three seconds, and the incense-like smoke from the smoldering spill should be inhaled by the patient, the smoldering being kept up by sharply moving the spill to and fro. The other of these milder remedies is furnished by the fragrant smoke of burning Irish peat. A "brick" of this peat should be placed upon fire in a grate until it begins to smolder freely; then, taken up in tongs, it should be held a foot or so below the level of the patient's nostrils.

TREATMENT OF BURNS AND SCALDS.

Moran states in the *Virginia Medical Monthly* of March 22, 1907, that the constitutional treatment of burns and scalds is directed to the relief of shock and the mitigation or abolition of pain. The former should be dealt with practically in the same manner as if it were occurring in any other injury; the latter is best relieved by the administration of the alkaloid morphine. This is a stimulant to the vital powers as well as being analgesic; but to get the good effect and quiet the suffering of the patient, one must use it rather freely.

The body temperature must be maintained by heat, alcoholic and hot drinks, stimulants, etc. If possible, where a tub is at hand, as in hospitals, place the patient in a bath at a temperature of 110° F. This refers to those cases with extensive involvement of surface and with great shock. The continuous warm bath, plain or medicated, is used with excellent results by many surgeons. Simple burns only require local treatment.

In applying local treatment to burns, one must be governed by the degree of burning. Burns of the first degree need very little treatment. Burns of the second and third degrees demand more vigorous measures for their healing than are required for the relief of a simple hyperemia. Here, in addition to medicaments the author urges as a precaution, when necessary, that means be provided to overcome deformity. Thus splints will hinder contraction, massage will prevent ankylosis, and skin-grafting will restore the parts to a more normal appearance. The last operation will transform a

chronic ulceration into healthy tissue and is often a life-saving procedure.

One should have due regard for asepsis and antisepsis in applying local treatment to burns, for the surgeon's fingers may be the carriers of infection, as prolonged suppuration sometimes proves. Vesicles should be punctured with a sterile needle and their contents allowed to escape. However, do not remove the epidermic covering; it serves as a protection to the underlying wound, excluding the air and guarding against infection. Irrigate the burned area with a weak antiseptic solution, or better, with normal salt solution. The latter is physiological in its action and does not destroy the cells of the parts. Indeed, some observers have found normal salt solution a valuable permanent dressing for burns.

When there is much destruction of tissue, remove all sloughs and putrefying masses and treat as the condition demands.

Excepting in severe, deep burns, one will perhaps obtain the best results from the use of oleaginous or wet dressings. A formula that has given good results in the author's hands is the following:

Carbolic acid, 1 per cent;
Balsam Peru, 5 per cent;
Castor oil, 94 per cent.

This mixture can be poured on gauze or cotton and applied to the wound. It should be renewed daily.

Solutions of bichloride of mercury, carbolic acid, and other poisonous drugs are mentioned to be condemned as dressings for burns on account of the irritation and pain which they occasion, especially when used on large surfaces, and also because they interfere with healing and seem to predispose to the formation of less smooth cicatrices. The author would not discourage, however, their service after the healing process is far advanced, and the parts have lost their sensitiveness.

Powders are only to be employed after the granulations have become practically aseptic and dry, and those official in the Pharmacopœia are as reliable as the more costly proprietary preparations.

Nutritive dressings have been recommended as valuable for sluggish granulating surfaces due to burns. Specially prepared meat juices are said to exert a wonderful influence upon the embryonal cells during the formation stage, but when the granulations become healthy they have served their purpose and must give place to other dressings.

THE TREATMENT OF ARTERIOSCLEROSIS.

SENATOR in *Folia Therapeutica* for April, 1907, says as to treatment that we must in the first place have regard to the cause, and endeavor to remove this by every means in our power. It is true we cannot impose a check upon the advancing years which lead to the senile form of the disease, but we can at any rate prevent the changes in the organs, and more particularly in the vessels, which gradually appear as age advances, retard them in their development, and see that they do not progress with undue rapidity—in a word, we can prevent the onset of *senectus præmatura*. Further measures are to be taken to keep at arm's length or remove completely all those injurious influences which in earlier life further the development of arteriosclerosis, and combat those diseases which act as the soil in which arteriosclerosis flourishes. The exogenic intoxications must be strenuously counteracted, and habits appertaining to alcohol and tobacco should either be forbidden or at any rate considerably restricted. In doing this, however, regard must be had to individual customs and conditions of life, as any sudden withdrawal or violent change is liable to be followed by bad consequences. Gradual methods of discipline are more to be recommended.

Apart from luxuries, however, the ordinary diet requires regulation. Having regard to what has already been said on the subject of intestinal decomposition resulting from proteid food, it will be readily understood that this must be restricted as much as possible. Nitrogenous foods such as meat, particularly foods rich in extractives, and very rich foods—such as beefsteak, ham, sausage, cheese, and such like—are

best excluded from the diet altogether. The so-called lactovegetarian diet is to be recommended, in which carbohydrate and fat are the chief constituents, in which albumen is only present in quantities strictly necessary for maintenance, and in which so-called extractives and products of curing are absent altogether. The type of this diet is that of milk to which is added all kinds of carbohydrates, such as bread, farinaceous foods, gruel, fat, green vegetables. Eggs may be allowed in small quantity. Meat is not taken at all or only in small amount, and should be of the watery kinds poor in albumen (the so-called white meats). Fresh fish is allowable.

In the case of the obese, some modifications of the above diet must be made in order to limit as much as possible the formation of fat, and to this end carbohydrates such as sugar, farinaceous foods, and other starchy foods must be excluded from the diet. In these cases, therefore, green vegetables and fruit are desirable, while rather more lean meat is allowed, care being taken that the bowels remain freely open and that muscular exercise is obtained by means of movements and active and passive gymnastics. The latter must of course be carried out without overstrain and under constant supervision of the heart's action.

In the case of diabetics who are also the subjects of arteriosclerosis, certain difficulties present themselves owing to the fact that albumnious food plays a prominent part in the treatment of diabetes. In these cases, therefore, the albuminous articles of diet should not as a rule be restricted to the same extent as in the other subjects of arteriosclerosis, but on the other hand greater limitations must be imposed upon the carbohydrates, for with but few exceptions the reduction of the excretion of sugar still remains the leading indication for treatment.

It will generally be found necessary to go first on one tack and then on the other, according to the rate of sugar excretion, sometimes more and sometimes less proteid nourishment being allowed, and the urgent claims of green vegetables, sour fruit, salads, and particularly of fat, should not be lost sight of.

While the lactovegetarian diet does not fulfil all the requirements of the case, it has one very decided advantage. From recent investigations it appears that the viscosity of the blood is lowered by this and the purer forms of vegetable diet. This means that the onward movement of the blood is promoted, and the work of heart and blood-vessels, particularly of the arteries, is lightened. By this means much good may be done toward counteracting the disease of the vessels and preventing cardiac hypertrophy.

A similar action, viz., that of decreasing the viscosity of the blood, appears to be possessed by preparations of iodine, and upon this fact rests, not alone, but for the greater part, the favorable influence which undoubtedly is to be observed by the use of these preparations in arteriosclerosis. It is possible that they may besides exert some favorable action upon the arterial coats, especially upon the intima.

The favorable influence of iodine preparations upon the circulation may be rendered still more marked by combining them with drugs which dilate the arterioles and capillaries—*i.e.*, the arterial basin. Such substances are nitrite of amyl and other nitrites. A good formula is:

> Tinctura iodi, min. xv;
> Spiritus ætheris nitrosi, f℥j.
>
> Twenty to thirty drops to be taken three or four times a day.

Or,

> Nitroglycerini, min. viij;
> Spiritus ætheris nitrosi, f℥j.
>
> Twenty drops to be taken three or four times a day.

A similar action, namely, dilatation of a considerable portion of the arterial basin, lowering of the blood-pressure, and thereby circulatory relief, can be obtained by means of various hydropathic procedures. Simple warm baths are effective, but where extensive arteriosclerosis exists, and particularly in cases in which the heart participates in the mischief, great care must be used, and it is therefore better to replace the simple

baths by carbonic acid or oxygen baths. Other hydrotherapeutic measures, such as water bandages, rubbings, baths, and douches in various combinations, may act favorably; these are not to be used as routine measures, but with a strict regard to the merits of the particular case and under careful supervision of the heart's action.

The same remarks apply to massage and active and passive gymnastics. It is here most particularly that one must proceed cautiously and with careful trial in order not to cause injury by overstepping the bounds of the patient's endurance.

THE CLINICAL SIGNIFICANCE OF DIGITALIS ARRHYTHMIA.

After observing a case of cardiac arrhythmia accompanying the use of digitalis and carefully analyzing the various theories advanced relative to the manner in which digitalis is supposed to produce this phenomenon, DURITRENKO (*Berliner klinische Wochenschrift,* Nos. 14 and 15, 1907) came to the conclusion that neither the protracted nor excessive use of the drug is capable of producing arrhythmia.

He believes that the arrhythmia depends upon certain conditions of the cardiac mechanism, which in turn are dependent upon certain transitory relations existing between various portions of the organism. For instance, in his own case, in which digitalis was used on three separate occasions, arrhythmia occurred at a time when there was great edema of the lower extremities, a condition which the author believes may have materially altered the relation between the peripheral and internal circulation.

He is of the opinion that the occurrence of a single extra systole during a course of digitalis treatment does not constitute an indication for the suspension of the drug. The drug must be stopped, however, as soon as any decided acceleration of the pulse manifests itself. Upon the occurrence of arrhythmia it must also be suspended until the patient's general condition becomes improved, when it may be begun again.

In severe cases of ruptured compensation the author believes that digitalis should not be administered until a preparatory treatment has been given, which will depend upon the physiological conditions present in the individual case.

NUTRITIONAL DISTURBANCES IN INFANCY DUE TO OVERFEEDING.

In an article in the *Journal of the American Medical Association* of April 20, 1907, BRENNEMANN concludes that:

1. Overfeeding is so prevalent in this country that it is the rule.

2. Overfeeding is second to no other factor in the pathogenesis of infant feding.

3. Overfeeding presents an easily recognizable, definite symptom-complex.

4. The percentage method is inadequate to prevent overfeeding, the well-known feeding "schedules for an average healthy infant" of a given age fostering it by recommending excessive amounts; and, moreover, mere percentage leaves undetermined the amount of food the baby gets.

5. To feed rationally and especially to prevent overfeeding it is necessary to know how much food the baby is getting in proportion to its body weight, best expressed in terms of energy quotient.

6. The disturbing element in overfeeding with cow's milk is the fat.

7. Fat in excessive amounts regularly produces constipation—proteids never do so.

8. It is never necessary to give more fat than proteids of cow's milk.

9. The interval between feedings should be four hours.

THE PROTECTIVE FUNCTION OF THE LIVER AGAINST TOXIC INTESTINAL SUBSTANCES.

PETRONE and PAGANO (*La Presse Médicale,* Feb. 13, 1907) conclude from the experiments which they conducted upon rabbits that the liver exerts an energetic protective action against toxic intestinal products, and that the views of certain investigators who believe that the intestinal wall itself is solely responsible for this de-

fense of organism against the poisonous substances are erroneous.

Their experiments were conducted differently from those which have previously been made. The materials employed were aqueous extracts of feces of children suffering with gastroenteritis. The animals employed were of the same sex, breed, and age, of the same color, and as near the same weight as it was possible to obtain them. All were subjected to laparotomy and the ligation of a mesenteric vein. In some the poison was injected through a mesenteric vein; in others through the auricular vein. Observations were made relative to the following conditions:

1. *General Condition after the Injection.*—It was found that those animals injected through the peripheral vein showed signs of profound weakness and refused food for two days. Moreover, they had a diarrhea which lasted from five to seven days.

Those injected through a mesenteric vein showed only transitory weakness, refused food for only half a day, and did not develop any diarrhea.

2. *Survival.*—Three of the eleven rabbits injected through the auricular vein died at the end of three days, forty-two hours, and twenty-two hours respectively. The remaining eight did not succumb.

None of the eleven injected through the mesenteric vein died.

3. *Weight.*—The rabbits injected through the auricular vein lost, on an average, 107 grammes the first day and 65 grammes the second day. The loss continued until the sixth day.

Those injected through the mesenteric vein lost, on an average, 37 grammes the first day and 18 grammes the second day. On the following days their weight progressively increased.

4. *Temperature.*—In those rabbits injected through the auricular vein a fall of temperature occurred three hours after the injection.

In those injected through the mesenteric vein the temperature became elevated three hours after the injection.

On the second day the temperature was above normal in both series of animals, and was thus maintained for two or three days. Afterward it slowly descended to the normal, but more gradually in those which had been injected through the auricular vein.

5. *Condition of the Blood.*—On the day after the injection a slight leucopenia was found in those animals injected through the auricular vein. This was maintained until the fourth day, showing, however, a gradual progressive diminution. All varieties of the white corpuscles were equally affected, so that the leucocyte formula was practically unchanged.

From the first day after the injection there was a marked increase in polynuclear cells in those animals which had been injected through the mesenteric vein.

The combined result of these observations shows that the intoxication produced by the fecal injections was more profound in those animals injected through the auricular vein. This circumstance led the investigators to believe that the toxic substance injected through the mesenteric vein was arrested and probably neutralized by the liver.

THE EFFECT OF NICOTINE ON THE CIRCULATORY SYSTEM.

Dr. K. GRASSMAN, of Munich (*Münchener medicinische Wochenschrift*, May 14, 1907), after carefully reviewing the experimental and clinical evidence relative to the effect of nicotine on the organs of circulation, states that the excessive use of tobacco, particularly if it be begun in youth, exerts an undoubted causative effect in the production of arteriosclerosis. Its exact influence, however, has not been accurately determined by experimentation owing to the impossibility of reproducing the associated conditions obtaining in the majority of cases in which tobacco is habitually used. Thus the common associated use of alcohol, tea, and coffee, as well as the possible influence of severe bodily and mental effort, has to be reckoned with as possible causative factors in the production of the changes in the blood-vessels.

Granted that the excessive use of the

drug favors arteriosclerosis, especially of the peripheral vessels, still it is not right to assume that the milder cardiac disturbances which it produces, such as increase in the frequency of the pulse, arrhythmia, and tobacco angina, predispose to disease of the heart muscle itself and to degenerative or sclerotic processes of the vessels. So many of these disturbances disappear upon the withdrawal of the poison that they cannot be considered dependent upon structural changes.

Grassman believes that the duration of the intoxication is more important than its subjective manifestations. Thus it is conceivable that the heart might become hypertrophied as the result of increased pulse-rate and blood-pressure caused by the action of nicotine.

The use of tobacco is so general that the factor "smoking" appears in the history of a great many cases of heart disease. Whether heart disease is less frequent in those who abstain entirely from the weed than in those who use it has not been determined by the study of a large number of cases.

In conclusion the author states that he thinks too little importance has been attributed to the influence of nicotine.

ADRENALIN AND NOVOCAINE FOR ENUCLEATION OF THE EYE.

Professor SIEGRIST (Berne) makes the following observations on local anesthesia for the evisceration and enucleation of the eye in the *Monats-Blaetter für Augenheilkunde* for January, 1907:

"For the purpose of producing local anesthesia I have used a glass syringe, with a capacity of 2.0 grammes and a slightly bent point, for years. After the conjunctiva has been anesthetized by three instillations of a two-per-cent sterilized cocaine solution, to which several drops of adrenalin have been added, I seize the conjunctiva bulbi, including the capsule, above, below, nasal and temporal, with pincers, drawing it somewhat forward, and introduce the bent point of my syringe into the fold of the mucous membrane with the concavity toward the bulbus, and am thus enabled to introduce the point between the bulbus, as far as the point of entrance of the optic and ciliary nerves. Thus I am enabled to quickly make four injections, above, below, nasal and temporal, of 0.75 Cc. in each instance of a two-per-cent novocaine solution, to which some adrenalin has been added, in the vicinity of the entrance point of the ciliary nerves (some drops of adrenalin should be added without fail to the two-per-cent novocaine solution after sterilization).

"One or two minutes after these injections one can begin with the evisceration or enucleation. If the injections have been made properly, the patient does not experience the least pain during the operation, no matter if the eye is sensitive to pressure or greatly inflamed.

"This method of local anesthesia takes the place of general anesthesia, and is much more simple and not so dangerous."

CHRONIC GASTRITIS.

In the *Journal of the American Medical Association* of April 20, 1907, CHASE advises the following plan of treatment, which is to overcome the inflammation and if possible to restore the secretion and the impaired motor power of the stomach. Since any single cause of the inflammation is rarely discoverable, we must remove all conditions which may be considered as contributing factors. Hence, good hygiene is advised, which means regular habits as to eating, exercise, and action of the bowels, repair of carious teeth, etc.

In this state starches are better digested in the stomach than under normal conditions, while proteids are but poorly cared for here, being digested almost entirely in the intestines. Bearing this point in mind and remembering that all mechanical, chemical, and thermal irritants are to be avoided, we have the key to dietetics in this disease.

The articles of food to be allowed the author has checked from a printed diet list, usually advising three meals a day, with

one or two lunches if desired. Of the more restricted diet in the beginning of treatment the patients will rarely eat too much, while if the scales show a maintenance or increase of weight he feels that they are eating enough, regardless of the number of calories which the food represents. Cooked fats he has found are not usually well borne. No alcoholic liquors are allowed.

To free the stomach of mucus and to stimulate secretion and peristalsis, douching of the stomach internally with a warm alkaline and saline solution is, in the opinion of the writer, the most valuable means we possess. For this purpose he employs his stomach apparatus, using the Rosenheim tube. The solution is injected with the amount of force desired, but it is always greater than that obtained by ordinary lavage. By the douche he believes that adherent mucus is more thoroughly removed than by simple lavage, while the stimulating action of the small, forceful streams must be far greater than that produced by pouring water into a tube which has but one or two large eyes. In fact, he feels that douching of the stomach in gastritis and other conditions will become a more popular means of treatment when its technique and results are better known.

Riefel agrees that "the internal douche may frequently be employed with profit in chronic gastritis. It may be useful under certain conditions to force the fluid into the stomach under pressure." Douching or lavage should be done at least twice a week, and always with the fasting stomach. The agents which he usually employs are sodium chloride and sodium bicarbonate, 30 grains of each to a pint of water at 100° F. "Washing out" the stomach with copious draughts of medicated water seems but a poor substitute for douching.

For the purpose of dissolving mucus and increasing the secretion he uses from 10 to 15 grains each of sodium chloride and sodium bicarbonate in a glass of warm water, to be taken about fifteen minutes before meals. Some of the saline mineral waters may serve the same purpose in a measure, so also may some of the more elegant preparations containing the various salts. The phosphate or sulphate of sodium may be used, especially if there is constipation; nux vomica, condurango, and other bitter tonics may be of service, but of late he has rarely used them.

The author has elsewhere expressed his views regarding the use of hydrochloric acid and pepsin. He believes that the large doses of from 15 to 20 minims of HCl fail to accomplish the desired object; moreover, he feels that they may do harm. Small doses of from 5 to 10 minims may in some ways prove beneficial, but he considers that there is no evidence to show that they stimulate the secretion of HCl.

Vacations and out-of-door exercise are important and at times seemingly necessary factors in the cure of gastritis.

MUCOMEMBRANOUS COLITIS.[1]

Those who have much experience of these cases know how difficult the management of them is, great patience and perserverance in treatment being required by both medical attendant and patient. At the outset of treatment we naturally eliminate any known cause, so far as this lies in our power, but sometimes we find the exciting cause is no longer in operation. Next we must adopt the best means of overcoming the stasis of the bowel and procure a regular and complete evacuation of its contents. The necessity of this is apparent, since it is the retention of mucous secretion, feces, products of putrefaction, and microbes which causes the constitutional disturbances and increases the local irritation. Moreover, requisite means have to be taken to improve the mucous membrane and the muscular coats of the intestine. For evacuation of the bowel aperients prove unsatisfactory in colitis. They never effectually clear the bowel without producing considerable local and general disturbance, and really aggravate the condition. As they lose their power in course of time the patient requires to take larger quantities and take them more frequently, thus making the local condition increasingly worse. Probably the best means

of evacuating the bowel and at the same time lessening its irritation is by colon irrigation. When this is properly administered it clears the bowel more effectually than aperients do, and instead of having a pernicious effect its action is most beneficial. A somewhat extensive experience has taught the writer the value of this method, and that it is by far the best way to commence the treatment of colitis. It has to be carried out with very great care and under certain restrictions, as it may do harm instead of good. But properly administered its value is undoubted. The fluid used must be of a bland, unirritating nature. It must also be given under a low and equable pressure, or painful spasm and irritation of the colon will occur. The temperature and the quantity of the fluid are also matters of importance.

A brief description of the mode of procedure employed at Harrogate will illustrate these points. The patient reclines upon a couch, at the foot of which is placed the apparatus for washing out the colon. This consists of a double cylinder, with a float in the lower cylinder, which regulates the escape of water from the upper, so that the same pressure is maintained throughout. The cylinder glides on two graduated uprights which mark the height and pressure and is moved to the height prescribed. There are a thermometer attached to the cylinder and a gauge to register the quantity of water, both sufficiently large for the patients to observe for themselves whilst lying on the couch. One of the sulphur waters is used for irrigation. The quantity prescribed may be from 10 to 40 or more ounces for each douche, and is usually repeated. The temperature varies from 96° to 104° F. or more, depending on the condition of the bowel. A long tube is passed per rectum into the sigmoid flexure, and the sulphur water gradually passes through it into the colon. This is retained several minutes by the patient, and is then ejected into a flat-bottomed receptacle. The douche is always given by a skilled attendant, who examines the ejecta and reports to the medical attendant.

Immediately after the internal douching the patient goes into an adjoining room and steps into a warm sulphur bath. While reclining in this a hot douche is directed through the water to the abdominal wall. It is delivered through a large nozzle with numerous fine perforations and moved slowly over the site of the colon. There are several therapeutic actions produced by this internal and external treatment besides the mechanical one of clearing out the intestine. The internal douche acts as a warm bath upon the intestine, the heat of this soothing it and the neighboring organs. Then the sulphur water brought in contact with the mucous membrane produces its well-known action of diminishing catarrh and restoring the mucosa to a healthy condition. Again, Sir William Ramsay has found that the stronger of the sulphur waters used is radioactive, and doubtless this property is beneficial, producing a sedative effect upon the bowel and the body generally. Another important action of the internal douche is free diuresis. This arises partly from the kidney being stimulated by the hot internal douche, though chiefly from the absorption from the bowel of some of the sulphur water, part of which is retained and subsequently secreted. This flushes out the liver, kidneys, and tissues, and carries away some of the toxins already absorbed.

When we come to examine the effects of the external treatment we find the warm sulphur bath soothes the nervous system and induces a sense of comfort in the patient. It determines an increased flow of blood to the skin, stimulating its glands and improving its nutrition. This in turn has a healthy influence upon the colon, as there is undoubtedly a close relationship between the skin and the intestine, a state frequently demonstrated in colitis. The external douche applied to the abdominal walls has an extremely soothing effect upon the colon, relieving pain and spasm when these exist. Further, the impact of the tiny jets of the douche stimulates the intestine and promotes muscular contractility in the distended portions. It is an interesting fact that the relief of spasm in one part of the intestine

and increase of contractility in another will take place at the same time, probably from the irritation of the intestine being allayed. After four or five weeks of such treatment a marked amelioration is produced in the patient's condition. The catarrh is lessened, pain and spasm are alleviated, and constipation is relieved.

Coming to the general symptoms, the first thing noticed is the improvement in the appearance of the skin. In a few days it becomes clearer and brighter. Next, if there is glycosuria it usually quickly disappears, as does also the stool pallor. Soon the patient feels better and becomes brighter and happier. The neuroses, which are generally the most troublesome features in severe cases, improve slowly, though in the milder forms of the affection they are soon ameliorated. One remarkable circumstance is the effect of treatment on a loose kidney. After some months of effective treatment it becomes much less movable, and in some cases when recovery from colitis has taken place the kidney becomes practically fixed. In severe cases of colitis one course of colon irrigation is not sufficient. It must be repeated once or oftener after an interval, depending on the state of the patient at the end of the course and subsequently to it.

During the last three or four years this treatment has been employed at Harrogate in several hundred cases of colitis. The excellent results which have been achieved have exceeded expectations. The results prove that the method is both rational and successful and that it is destined to become an essential part in the treatment of many cases. The same kind of treatment has been carried out at Plombières and Châtel-Guyon for several years.

Careful dieting during and after the course of douching is imperative. Foods which are easily digested and leaving only a small and unirritating residuum are best. In the experience of the author the diet advocated by von Noorden proves unsuitable. Further, the patient should be instructed to eat only a small amount of animal food, since it is a fruitful source of putrefactive material. They require to be warmly clothed and be careful to avoid chills, which are apt to increase the catarrh of the colon. Warm, bright sunshine is a valuable aid to treatment and sometimes is indispensable. Moderate exercise should be regularly taken in the fresh air, that of an upland or mountainous character being especially beneficial. Moderation is essential in food, drink, exercise, and pursuits. In short, the scriptural injunction, "Be ye moderate in all things," applies more to patients affected with colitis than perhaps to any others.—*Lancet,* May 18, 1907.

A COMPARISON OF THE THERAPEUTIC ACTION OF THE VARIOUS COMMERCIAL SALTS OF QUININE.

Quinine and its salts contain different proportions of the alkaloid owing partly to the presence of water of crystallization and partly to differences in the relative weights of the acids combined with the alkaloid. The percentages of alkaloid in quinine and its more important salts are as follows: Quinine, 85.7; quinine sulphate, 74.1; quinine bisulphate (acid sulphate), 58.8; quinine hydrochloride, 81.5; quinine bihydrochloride (acid hydrochloride), 81.6; quinine hydrobromide, 76.4; and quinine salicylate, 68.5. They differ widely therefore in alkaloidal content, the sulphates being the weakest. But the ordinary sulphate was the first salt of quinine to be used widely, and it remains to-day the most popular salt, owing probably to the fact that the superiority of other salts of quinine is not generally understood. This is shown by Dr. R. Howard in a note on the prophylaxis of malaria in the *Chemist and Druggist* of March 23. The bisulphate of quinine was introduced on account of its greater solubility as compared with the ordinary sulphate; but it carries a large quantity of sulphuric acid into the stomach, and so causes indigestion. The hydrobromate and hydrochloride are recommended by Dr. Howard on account of their ready solubility and high alkaloidal content, as well as owing to the fact that they are less liable than the sulphates to disturb the digestion. Dr. How-

ard considers the bihydrochloride to be the best salt of quinine for internal administration; it contains a large percentage of quinine and it is soluble in its own weight of water, so that even in tablet form this salt would not be likely to pass undissolved through the system. The bitter taste of the bihydrochloride is its only drawback, and this it shares with the other more soluble salts of quinine.—*Lancet,* April 30, 1907.

THE COST OF FLAVOR.

Physiological chemists occasionally delight to tell us that we are the dupes of esthetic senses and pleasing flavors. Men will pay, they say, half a guinea for a pint of turtle soup which, from a strictly nutritive point of view, is not worth a twentieth part of that sum. Oysters, we are told, are an extravagant form of food, since fourteen of them do not contain as much nourishment as a single egg, and it would require the ingestion of no less than 200 good oysters before the protein equivalent of a pound of beef was reached. Caviare, again, is not to be compared with the bloater as regards its nutritive value; indeed, the latter "offers the largest amount of nutriment for a given sum of any animal food." It is evident if we regard these conclusions seriously that a large section of the human race is wickedly indulgent, caring more for the palatable than the nutritious quality of food. The same appears to be true in regard to beverages; and even in the case of cigars there is no difference, chemically speaking, between the penny Pickwick and the shilling Havana. The difference of 11d. is paid for flavor, and flavor alone. Physiologically it is possible that a "brandy-and-soda" costing, say, 1s. is just as satisfactory as a "pint" of champagne at 5s. Similarly it may be said that a pint of beer at 6d. is quite as good, dietetically speaking, as a small bottle of Chateau Margaux at 3s. 6d.

There are, however, clearly instances in which in no sense can the nutritive equivalent of food and beverages be summed up in so many pounds, shillings, and pence. How often is it found, for example, that the invalid may be tempted to take a few oysters in preference to a small beef fillet, or some turtle soup when calves' head, the basis of mock turtle, would scarcely appeal to him, even although it may be more than equal in nutritive value to the only reptile used to any extent as food in England. Whenever a person refuses to take a given food, however nutritive and wholesome it may be, because it is not tempting to the sight or the palate, it is in many instances probable that if he struggles to overcome his fastidiousness such food may prove to tax his digestive functions and may even cause gastric trouble. The chemical analysis of food and physiological experiments in the test-tube do not take into account this psychical factor of digestion, for the digestive process is well begun when the sight of food is pleasing. On the contrary, when food does not appeal to the eye it is likely not to appeal to the stomach. It is hardly reasonable to conclude, therefore, that the price of flavor is always the price of luxury. It is wrong, of course, to give way constantly to the promptings of the fanciful palate, and there is little doubt that when this outrage on a healthy function is permitted it is akin to the evil which follows the frequent imbibition of alcoholic drinks. In both cases overstimulation wears out the normal impulses. The man who enjoys plain food is miles ahead, physically and physiologically speaking, of the man who would leave his meal untouched if it were not that every item of it was calculated "to tickle the palate."—*Lancet,* May 18, 1907.

ADRENALIN IN PURPURA.

Biondi (*Centralblatt für innere Medicin,* 1907, No. 4) treated a thirteen-year-old boy, who was afflicted with Werlhof's disease (purpura hemorrhagica) with ten injections of a ½-per-cent adrenalin solution in ten succeeding days. There were immediate cessations of the hemorrhage, and the patient recovered rapidly and soon ceased to be anemic, but the fever was not influenced by the injections.

SOME INDICATIONS FOR THE TREATMENT OF CHOLERA.

In the London *Lancet* of April 30, 1907, CHOKSY says that the choice of means for restoring to the system the loss of fluids is limited to but three: (1) transfusion of saline fluids; (2) hypodermoclysis; and (3) enteroclysis. The first is not easy of application in epidemic times, requiring skilled assistance and other facilities; the second, apart from being painful, often gives rise to cellulitis in spite of all aseptic precautions, and entails prolonged convalescence and tardy recovery. Reliance should therefore be placed on the last, and rectal injections of one pint of normal salt solution made with boiling water and cooled to about 100° F. are administered at intervals of four hours. If the hips are well elevated, and the injection given very slowly by a gravitation douche raised to about four to five feet above the level of the bed, with a soft-rubber tube inserted high up, from 10 to 12 inches, it is painless, without discomfort to the patient, and is almost always retained; occasionally an ounce or two may be expelled after an hour or so. It is not, however, practicable to give the injection if the frequency of stools is great, nor is it required in the early stage if the drain from the system can be checked. But in the advanced and collapse stage such injections are of great utility, as the fluid is rapidly taken up by the system and by diluting the blood renders it less viscid and therefore easy of circulation. Circulation is thereby restored and urinary secretion is stimulated. Under their influence the patient loses that haggard and pinched appearance so characteristic of cholera; the flesh does not appear shrunken nor the eyes sunken and hollow—in fact, the aspect of the patient in most of the cases is placid and not at all typical of cholera. The frequency of the injections is gradually reduced as the patient improves, and after the urinary secretion has become freely established they are stopped.

The indication to keep up the circulation and so reëstablish the functions of the kidneys is met partly by the measure above detailed and partly by the use of drugs acting directly as well as indirectly upon the heart and the kidneys. With this object the following formula is employed in doses of 20 minims, in an ounce of water, administered every two, three, or four hours according to the state of the pulse:

> Caffeine sodio-salicylate, 2½ grains;
> Sparteine sulphate, ½ grain;
> Liquor atropinæ (B. P.), 1 minim;
> Spiritus vini Gallici, q. s. ad 20 minims.

Coldness of the extremities and profuse, clammy perspiration are readily controlled by the atropine; in addition, hot-water bottles, or foot and body warmers, sinapisms to the calves, and friction of the limbs with dry ginger powder are often resorted to. Hot linseed poultices to the abdomen and loins are continually kept on and changed every two or three hours. In order to encourage urinary secretions, if defective in spite of the above measures, poultices of digitalis leaves are utilized, and often dry cupping is supplemented with good results. The above measures are in most cases effective in keeping up the circulation and reëstablishing the function of the kidneys.

The all-important question of nourishing a cholera patient presents many difficulties. The extreme irritability of the stomach and the almost total inhibition of all digestive and absorptive powers indicate that the alimentary system, already so gravely perturbed by the cholera bacillus and its toxins, is in no mood to tolerate any further irritation. The stomach instantaneously repels all irritants—even the blandest nourishment is but an irritant at the time—and sounds a warning to hold the hand. It is well to listen to it. The alimentary tract must have time to throw off the poison and to recoup itself until its natural functions become reëstablished. Absolute physiological rest is indicated and should not be withheld. It is best therefore to stop all food and all alcoholic preparations. The latter considerably aggravate the irritability of the stomach, are generally rejected as soon as administered, and with-

out doing any material good to the patient exhaust him by frequent rejections. If they are administered with the object of stimulating the heart the object is defeated, inasmuch as each act of vomiting adds to the exhaustion and restlessness of the patient. No alcohol, no milk, and no meat preparations, is a salutary doctrine under the above conditions. The only nourishment—could it be so called—allowed is hot black coffee without milk and without sugar. This is administered day and night as frequently as the patient requires a drink. It is usually retained and quenches thirst far better than cold fluids. It is curious to notice that excessive thirst and that wild craving for cold liquids so characteristic of cholera are absent among the patients treated on the above lines, the caffeine probably soothing the irritability of the stomach which is not otherwise irritated, and the rectal injections supplying the fluid to the system, and thus relieving thirst indirectly. The patients bear the deprivation of food well, and even among children the distress from its absence is not so evident as one would be led to expect. Black coffee is thus administered for from three to five days, until the functions of the kidneys are restored, and there is a change in the character of the stools. Thereafter thin arrowroot coffee, slightly sweetened, is allowed, to which subsequently milk is gradually added. After the disappearance of all acute symptoms plain biscuits, rice and milk, plasmon, and later fresh mutton broth are allowed.

As the stage of reaction is but a manifestation of toxemia, it requires careful watching. It is, however, not well marked nor invariably present in the cases treated by the above method. Violent fluctuations of temperature are practically unknown; the body warmth, already so well sustained, gradually returns to normal without attaining to any great height, and the danger always associated with this stage is practically non-existent. The treatment becomes thus considerably simplified, inasmuch as before this stage is reached the greater portion of the toxins have been eliminated and the risk of acute toxemia altogether averted. High temperature, reaching to 104° F., is but rarely observed, and the acute delirium that occasionally accompanies it is also an equally rare occurrence. An alkaline mixture containing sodium bicarbonate, citrate of potash, with tinctures of digitalis and nux vomica, is all that is needed, as it acts both as a diaphoretic and diuretic. Antipyretics are not necessary. Should the delirium be acute the bromides with tincture of hyoscyamus are indicated. If very violent, hyoscine hydrobromate or even morphine may be required.

Symptomatic treatment may be required for occasional persistent vomiting, for after-diarrhea, or for prostration, and sometimes to encourage the sluggish functions of the kidneys which after partial efforts at reaction appear to lapse again. Persistent vomiting is controlled by cocaine hydrochlorate in doses of one-eighth of a grain dissolved in a teaspoonful of water, or mistura pepsini composita cum bismutho (sine opio) in ten-minim doses, administered every quarter or half an hour until four doses have been administered. Crushed ice is sometimes also useful. The after-diarrhea can be treated by bismuth, or, better still, by dermatol. Prostration is overcome by hypodermic injections of camphor (camphor 2, ether sulphuric 3, and olive oil 7) in doses of 20 minims every two or three hours. The measures above described for encouraging urinary secretion have to be reëmployed with greater vigor for restoring urinary functions. Dry-cupping is especially useful and may be freely employed.

The only sequelæ requiring attention are parotitis and stomatitis. They are treated on general principles.

THE OPSONINS.

MUMFORD in the *Boston Medical and Surgical Journal* of March 28, 1907, says that a question which is frequently asked, and it is a practical question, is, How can the average busy practitioner employ these

measures? Frankly, one cannot employ them unless he is in touch with a laboratory and laboratory workers especially equipped. The technique is laborious and time-consuming. Two or three cases may easily occupy all the time of one investigator, although it is becoming apparent that certain common infections, like boils and carbuncles, may be treated with stock vaccines kept for that purpose. Such rule-of-thumb work may answer in routine dispensary practice, but would be largely futile when one came to deal with more serious cases. Be it said, however, that average inoculations, even though given in error, are found to be harmless when given for localized infections.

There is the further question of the value of opsonins as a diagnostic agent. This is a matter which is still *sub judice*, although, as Ross states, certain general principles have emerged from the study of many cases:

1. Normal individuals not the subjects of any bacterial infection present a constant opsonic power to the various pathogenic bacteria. (This statement is still subject to qüestion, probably on account of errors in technique.)

2. Individuals the subjects of a strictly localized infection, due to any microörganism, show a lowered opsonic index to that particular organism as compared with a normal person.

3. Individuals the subjects of systemic infection show a high, or fluctuating from high to low, opsonic power.

This last condition of fluctuation is probably due to the "negative phase" and "positive phase." The "negative phase" follows a vaccination for twenty-four hours. The index falls at first, and then ("positive phase") rises up to or above the normal. Ross quotes a case in illustration of the opsonic method as used in the diagnosis of an obscure case.

The patient entered the hospital with a provisional diagnosis of general tuberculosis. His tuberculo-opsonic index was found to be 1.0 (a figure slightly above the normal for tuberculosis—an exception to the rule that 1.0 is normal). The physician suspecting the possibility of a gonococcal infection estimated the opsonic index to the gonococcus, with the result that it was found to be twice normal, a condition of the blood which is almost certainly associated with a gonococcal infection only, and indicates that the patient's own infecting organisms were oversupplying him with opsonins. Further investigation confirmed the diagnosis of gonorrhea with a general infection.

Surgeons are not especially concerned, however, with infections of that type which fall within the province of the internist, though we are coming to feel that certain properly surgical affections are yielding hopeful results when subjected to opsonic therapy: furunculosis, pustular acne, chronic empyemata (after drainage), cystitis, and especially the various wound infections due to staphylococci and colon bacilli. In Boston they are by no means convinced of the value of opsonic treatment in cases of tuberculous adenitis, although Wright makes positive claims in such cases. It was hoped at one time that various obscure and obstinate joint infections would show positive results from opsonic therapeutic and diagnostic measures, but although a few encouraging cases have been encountered we cannot feel as yet that positive results have been obtained. This is true not only of tuberculous joint lesions but of joint lesions due to other organisms, and the probable reason is that we have not yet been able to isolate and study some of the organisms which we assume to be the causative agents in many obscure cases of arthritis.

The reader will see, therefore, that surgical progress in the use of opsonins is not yet in a positive position—surgical progress in this community at least. One may describe our attitude toward the question as generally hopeful but still somewhat puzzled. There is no doubt that some cases, notably staphylococcus and colon cases, have been greatly improved or cured, but we feel that the whole subject is embryonic as yet, and that a deal

of work remains to be done before we can record the opsonins invariably and confidently among the important agents at our command.

THE TREATMENT OF TUBERCULOSIS BY MARINE CLIMATES.

EWART reminds us in the *British Medical Journal* of April 27, 1907, that ocean climate differs from all others in its exclusively marine character and its equability, in contrast with the sea-coast climates, which are the most variable and offer endless combinations between the features of the coast and those of the sea, none of them being the ideal one for consumption, because not always at their best, whilst some may prove to be too protective in the individual case, and others too active for some of the complications.

Climate and open air can have no direct effect upon the bacillus, and the beneficial effects of the seaside and its sea air are mainly dependent upon the patient's power of "reaction" on the one hand, and on the other upon the all-important effect upon the tendency to catarrh.

Touching the forms of tuberculosis, Nathan Raw has recently urged an etiological and clinical distinction between the infection from the "bovine" bacillus and that from the "human" bacillus, which agrees well enough with our climatological data and practice, all cases of "bovine" infection (surgical, glandular, scrofulous, cutaneous, serous, and visceral other than pulmonary) being almost unreservedly benefited by the sea. This is not always the case with the pulmonary affection, for which alone the "human" bacillus invasion would be to blame.

The multiple types evolved by individual predispositions (constitutional, organic, and functional) fall into the two groups, uncomplicated tuberculosis and catarrhal tuberculosis, or phthisis pulmonalis. In the first group tuberculosis may be "latent" and healing, or "declared" and spreading. In the second (which includes the acute caseous form) catarrh is the chief agent of mischief as well as the first object of climatic treatment. To describe as "consumptives" the bearers of latent and spontaneously-healing tubercles would be inaccurate; and, on the other hand, "tuberculosis" does not depict the varied miseries of catarrh, of pneumonia, and of caseation in the painful record of advanced consumption. Bacillary infection ("tuberculosis" *per se*) may mean little or much damage, but "consumption" (or, in the Greek vernacular, "phthisis") is always a big affair, and in pathology it spells "catarrh." We now have to reverse the famous dictum of Niemeyer, and to recognize that "the worst fate that can befall the patient infected with tubercle is that he should develop phthisis."

The aerotherapeutics of tuberculosis are thus, practically speaking, those of catarrh; but whereas sea air is curative of some forms of simple non-bacillary bronchitis, it is not always sufficiently dry for the cure of catarrh based upon tubercle. Whether we consider the meteorological factors or are guided by the results observed clinically, it cannot be gainsaid that the altitude is likely, and proves itself, to be more effectual in obviating early catarrh and curing it at any of its stages than the climate of the coast. In this connection Dr. William Gordon's investigations upon the influence of wet winds are most suggestive, although he has not hitherto formulated any conclusions beyond the broad fact that the prevalence of phthisis is definitely increased by it.

But where there are not any altitudes available, the writer advocates adopting an opportunist policy and making the most of an unrivaled assortment of "protecting" and "bracing" seaside resorts by careful selection of cases, by progressive elaboration of their clinical treatment, and by measures tending to correct any imperfections of the local climates. The "bracing" resorts possess the highest restorative efficiency, but their suitability for pulmonary tuberculosis is limited. The criterion of fitness for these climates is integrity of the mechanisms of "reaction," which are dependent above all upon cardiopulmonary

efficiency. Thanks to the possession of sound lungs and of a sound heart, the great majority of cases of tuberculosis other than pulmonary—surgical, scrofulous, cutaneous, etc.—are eligible for the bracing resorts and derive there the greatest benefit. Many cases of "latent" pulmonary tuberculosis are for analogous reasons eligible. But "declared" pulmonary tuberculosis, even at an early stage, and "early phthisis pulmonalis" claim the most careful climatic management, with a view to the avoidance or the cure of catarrh, and need protection from the stronger kinds of sea air. All cases of "advanced" phthisis, as well as the group of "'chronic quiescent phthisis," admit of no alternative —they are to be sent to the milder stations.

The present position of the treatment by marine climates rests upon the recognition of the fact that mere "airing" and "salting" are not competent of themselves to cure the pulmonary complications of the disease when it affects the lungs. "Open air" and "sea air" are a basis for treatment, but cannot supersede the scientific methods of modern therapeutics. The marine resorts should add to their natural resources increased facilities for a systematic treatment planned upon a combination of the hospital idea and of the sanatorium idea. On this scheme alone can they look forward to an increased curative efficiency.

Meanwhile a much greater field of usefulness is open to them in prevention. The sanatorium movement is gravitating in that direction; but the seaside is *par excellence* the place for the "prevention-sanatorium" or "preventorium," the inmates of which should be recruited from the most threatened ages and from the most dangerous surroundings. This is the direction in which a more extensive and systematic use of marine climates is indicated. Their wider employment for the extirpation of tuberculosis in the coming generation is a possibility and a public duty.

Lastly, the task of improving the local opportunities for climatic treatment is not beyond the skill of modern engineering. Some of the prosperous stations rejoice in a sandy soil suitable for the growth of the pine; others in a mild and sunny hinterland; others in cliffs combining available shelter and altitude.

THE INDICATIONS FOR THE USE OF OPIUM.

STOCKMAN in the *Practitioner* for May, 1907, when writing on this subject reminds us that the value of opium in lessening spasm of involuntary muscles is seen in the treatment of lead colic, when the action of the metal induces a painful contraction of parts of the bowel with severe constipation. The relaxation of the spasm allows purgatives to act satisfactorily, and abolishes the severe pain. In tenesmus from any cause a suppository or enema containing opium is usually efficacious. In hepatic and renal colic it is a most valuable remedy, and here, as in lead colic, it may be advantageously combined with belladonna, or nitrites. In strangulated hernia it may aid reduction, and in severe vomiting, obstruction of the bowel with spasm, spasm of the cervix uteri, irritation of the bladder, and similar conditions, its antispasmodic action may often be used with great benefit. In all such cases morphine probably acts by depressing the local nerve ganglia which control the muscle fibers.

In treating dyspnea with morphine, great discrimination in its use has to be observed. In pulmonary dyspnea, as in pneumonia with much consolidation, or bronchitis with excessive secretion, in edema of the lungs, and in general dropsy from cardiac or renal disease, morphine should be regarded as dangerous, owing to its depressing effect on the respiratory center, which should be maintained in as active and as sensitive a state as possible. But, on the other hand, when dyspnea is a prominent symptom in aortic disease, dilated heart, and pericarditis, and in attacks of so-called cardiac asthma, and when the respiratory disturbance is primarily of cardiac origin and the activity of the center is exhausting and detrimental

to the patient rather than beneficial, morphine should be given. The respiratory center in these cases is probably unduly excited, and the drug exercises a calming effect on it. In the distress of a sudden pneumothorax it often gives great relief in the same way. Many cases clinically present a mixture of these two causes of dyspnea, and then much care requires to be exercised in the use of opiates. In bronchial asthma nothing gives such complete and lasting relief as a hypodermic injection of morphine, but its action here is really an antispasmodic one and comparable with that on other non-striped muscles. Some time ago Dr. Thomson, of Uddingston, drew the attention of the writer to the fact that 1/12 to 1/8 grain of morphine, given hypodermically, with 5 to 8 minims of adrenalin solution (1 in 1000) was even more active than morphine alone in cutting short the spasm, and this the writer affirms from his own experience of several severe cases.

It is hardly necessary to dwell on the usefulness of opium in checking acute diarrhea from any cause, or on the necessity, in certain cases, of first giving a purgative. In bronchitis, with much watery secretion, small doses, combined with belladonna, sometimes greatly help in checking the discharge.

SOME RECENT RESEARCH WORK ON ANESTHETICS.

Prof. G. A. Buckmaster and Mr. J. A. Gardner have undertaken experiments since 1905 with a view to ascertaining the relation into which inhaled chloroform enters with the blood, and their results were given in a recent communication to the Royal Society. In the present research cats were selected for use in most of the experiments, as the phenomena of chloroform action upon these animals have been shown by MacWilliam to resemble closely those evinced in man.

Previous workers have supplied data on the amount of chloroform found in blood after anesthetization; thus Lallemand, Perrin, and Duroy found that 100 grammes of blood contained 1 cubic centimeter of chloroform vapor in the blood and tissues of dogs killed by the anesthetic. Gréhant and Quinquaud by a more exact method found 1 gramme of chloroform in 1800 to 2181 grammes of blood, the estimation being taken at the moment of anesthesia in dogs. Pohl, in a series of elaborate determinations, employing a modification of Schmiedeberg's method, arrived at the average amount of chloroform present in the blood of animals killed by chloroform as being 0.035 gramme per cent. The very interesting researches of Nicloux and J. Tissot are considered at length in the present paper. The contention of Desgrez and Nicloux that chloroform becomes decomposed, and that carbon monoxide is present in the blood after prolonged chloroform inhalation, is not borne out by the experiments of Buckmaster and Gardner.

To determine the amount of chloroform in the anesthetized animals Buckmaster and Gardner relied upon the difference in the chlorine content of the blood before and after inhalation of chloroform, samples of the blood being withdrawn at intervals during the experiment. The chlorine was estimated by the method of Carius, some special precautions being adopted to insure accuracy. The anesthetic was given through a tracheal tube either from a Woulfe's bottle or from a bag containing a mixture of known strength obtained by Dubois's apparatus.

Reviewing the experiments as a whole, the investigators propound the following conclusions: The amount of chloroform in the arterial blood of cats at the moment marked by cessation of the conjunctival reflex in both eyes is estimated as between 14 and 27.6 mg. per 100 grammes of blood. The amount varies according to individual peculiarities of the animals, but the percentage of chloroform in the blood necessary to produce anesthesia is not affected by the body weight of the individual. The rate of induction is also variable, and does not appear to be wholly dependent upon the percentage of chloroform in the inspired air. The lethal dose capable of

abolishing respiration is also variable, being on an average 40 mg. per 100 grammes of blood. This dose is very near the anesthetic dose; indeed, all recent workers have shown how narrow is this margin between the amounts of chloroform in the blood which are necessary on the one hand to induce anesthesia, and on the other that degree of narcosis which is marked by cessation of respiration and death. The elimination of chloroform after its inspiration has ceased is rapid and less variable than that of its absorption. The important question, How is the inspired chloroform distributed between the corpuscles and the plasma? is also considered in the present portion of Professor Buckmaster's report. The corpuscles appear in the case of cats to take up most of the chloroform; the plasma, unless the anesthetic is rapidly administered, or is pushed to an extreme point, remains free. This is also true of dogs, except that in their case chloroform appears to enter more easily into the plasma. These results agree, it will be seen, with those arrived at by Nicloux.

Professor Buckmaster and Mr. Gardner's research, the first portion of which is described, is certainly one of great importance, and, taken in connection with the reports of the Special Chloroform Committee of the British Medical Association, throws much light upon the vexed question, What is the percentage of chloroform in the blood which represents the state of anesthesia, and how far is this removed from the percentage which destroys life? Tissot asserts that no relation subsists between the proportion of chloroform in the blood and the effects of the drug, since these effects depend upon the quantity which acts upon the central nervous system and not on the absolute amount of chloroform in the blood. Again, the same observer has pointed out that the actual quantity of chloroform required to induce anesthesia is far less when the rate of induction is slow, so that in the case of rapid administration, as in that of the administration of high percentages, there is more or less surplus of chloroform in the blood, which may find its way to the central nervous system and produce lethal effects. These conclusions, arrived at from so many different points of view, all tend to accentuate the dangers of rapid anesthetization, as also of the employment of high percentage vapors, and thus tacitly condemn those methods which do not afford a means of controlling the percentage of vapor inhaled and the rate at which it is administered.

Dr. N. H. Alcock, in the course of a research upon the action of anesthetics on living tissue, has investigated the behavior of isolated nerve and that of frog's skin when subjected to the influence of anesthetics. Chloroform, ether, and carbonic dioxide affect not only the negative variation in mammalian nerve, as was shown by Prof. A. D. Waller, F.R.S., but influence also the injury current. Dr. Alcock's experiments, which are of a highly interesting and ingenious nature, appear to demonstrate that chloroform, ether, and probably alcohol also, are capable of producing an electromotive effect upon nerve tissue. In frog's nerve the maximum value of electromotive effect was found to be about 0.030 volt. This has the same sign as the current of injury. A further result of the action of chloroform or ether is a diminished polarization but no change in the resistance of the nerve. From his experiments Dr. Alcock infers that the electromotive effects are due to the same cause which produces the injury current, and as the resistance is not lessened no additional ions are formed.

The experiments dealing with the frog's skin are perhaps more important in the sense that they permit of wider generalizations, and they are less open to the ambiguity such as may exist in the case of the experiments upon nerve. Dr. Alcock is led to advance the theory that the action of the anesthetic probably lies in its power of entering a seimpermeable apparatus—in the case of nerve, an axis cylinder; in that of skin or cognate structure, a semipermeable membrane. Such a theory

seems to fit in with Dr. Alcock's experiments and to explain many of the recognized facts of anesthetic action. As the author of the research points out, the views of Prof. Benjamin Moore and Dr. Roaf, that anesthesia is "due to a paralysis of the chemical activities of the protoplasm as a result of the formation of such aggregates," harmonize and may even explain this power of permeation. The subject is one not only of great importance, but peculiarly fascinating, and will, we trust, be advanced further in the course of the prosecution of the researches which these experimenters are conducting.

Dr. E. H. Embley has reported to the Royal Society the results of an investigation into the pharmacology of ethyl chloride carried out in the Physiological Laboratory of the University of Melbourne. Dogs were selected for the experiments, but many initial difficulties were encountered. Ethyl chloride is soluble in water to the extent of 253.36 per cent by volume, and although it is freely absorbed by blood, the exact amount taken up is not easy to estimate, as the blood becomes of tarry consistence and "lakes" in the earlier part of the absorption process. It seems clear that, like chloroform, ethyl chloride enters into chemical union with the blood. Upon the isolated heart ethyl chloride caused paralysis, an effect common to it and chloroform, although nineteen times more ethyl chloride is needed. Similarly it causes relaxation of the arterioles when these are isolated from the central nervous system. Upon the central vasomotor mechanism ethyl chloride acts as a stimulant, at least for a time, and the net result upon the vasomotor system in the intact animal is dilatation, although the degree of paralysis is strikingly less than that caused by chloroform. Experiments with regard to vagus inhibition showed that although the heart was as readily stopped under ethyl chloride as it is under chloroform, yet under the former anesthetic the inhibition was never fatal, whereas under the latter it is frequently so. The cardiac inhibition appears to be due to central stimulation; it is not reflex. In concentrations of 10 per cent and over, ethyl chloride, according to Dr. Embley, produces paralysis of the myocardium quite comparable to that caused by chloroform in one-nineteenth of the above concentration.

With regard to respiration, these experiments indicate that with ethyl chloride, as with chloroform, the respiratory function is maintained so long as blood-pressure does not fail. The fall of blood-pressure, when it takes place, is due to vagus inhibition, and so in this respect ethyl chloride differs from chloroform, since under the latter the fall in blood-pressure is due in part to cardiac paralysis and in part to vagus inhibition. High concentrations (20 per cent) of ethyl chloride can, however, produce respiratory failure apart from any vasomotor effects. For dogs the limit of safety is placed at from 5 to 7 per cent in air inspired, and Dr. Embley is led to believe from his clinical observations that a like dosage should be accepted in the case of man. The value of Dr. Embley's work is great, especially at the present time when the use of ethyl chloride has become so general. There have been several deaths under this anesthetic, and it is to be hoped that a more accurate knowledge of its properties will obviate the repetition of mistakes which, in the case of a powerful drug such as ethyl chloride undoubtedly is, are liable to have serious if not fatal results.—*British Medical Journal,* April 20, 1907.

JOINT AFFECTIONS IN NERVOUS DISEASE.

In the course of an article on this subject by BARKER, in the *Journal of the American Medical Association* of February 2, 1907, he points out the great importance of the differential diagnosis of these arthralgias from organic disease, especially from tubercular gonitis and coxitis. The nocturnal exacerbations of the pain, which frequently occur in sleep and awaken the patient in tubercular coxitis, are absent in psychoneurotic coxalgia. On making passive or active movement of the joints in

cases of joint neurosis, the patients complain of "horrible, unbearable pain;" sympathy only increases the pain, while if the attention can be diverted temporarily the movements can often be carried out without severe pain. It is often found, further, that the pain is more intense in the skin and soft parts than in the joints themselves. Careful esthesiometric tests nearly always show a distinct hyperalgesia of the skin over the joints between the attacks of pain. In hysterical coxalgia, for example, there exists frequently an area of cutaneous hyperalgesia, triangular in shape, the apex of the triangle being at the lower margin of the symphysis pubis, the base at the middle of the sacrum. When the knee, elbow, or wrist is complained of, the hyperalgesia of the skin is usually cuff-like in form, the area surrounding the whole joint. During the severer neuralgiform seizures the hyperalgesia may change to a total hyperalgesia of one-half of the body. Analgesias are sometimes demonstrable in hysterical cases.

In psychoneurotic coxalgia the attitude of the lower extremity may resemble most closely that met in organic disease of the hip-joint; there may be apparent shortening, abduction, lateral rotation, or, later on, adduction and medial rotation. The limping gait, accompanied by lumbodorsal pseudoscoliosis, may strikingly simulate that of organic hip disease. Some of these patients refuse after a time to make any attempts to move their joints, and lie in bed for months or even for years.

A few cases of psychoneurotic arthralgia are associated with a higher grade of muscular atrophy than is commonly seen from simple inactivity, and these may be puzzling. According to Gilles de la Tourette, the atrophy differs from that of organic disease, being more general in the extremity with the psychoneurotic joint, while with the joint of organic disease it is localized chiefly in the muscles which extend the limb.

With *x*-ray examinations and tuberculin reactions organic arthropathies are now less likely than formerly to be mistaken for joint neuroses, but there is still danger that the psychoneurotic joint will be looked on as an organic disorder. Very skilled surgeons and physicians have been deceived before now; even to-day it is the neurologist who often saves the psychoneurotic joint from the knife and saw or plaster-of-Paris fixation. In doubtful cases the deep chloroform narcosis recommended by Charcot should be resorted to for diagnostic purposes. Not only do the contractures disappear when the patient is anesthetized, but a careful physical examination of the joint can be made and the physician can assure himself of objective negativity. In addition the phenomena observable during recovery from anesthesia are helpful in differential diagnosis. It is the sensitiveness of the skin which returns first in the psychoneurotic joint, the tenderness and pain in the deeper parts, elicited by tapping the trochanter or the heel, coming back later. It is only after the patient has rather fully recovered from the anesthesia, say in the course of from twenty to thirty minutes, that the deep pain and contractures return. It is just the opposite with the joints of organic disease.

The treatment of the psychoneurotic arthralgias should be mainly directed toward the general psychoneurosis which underlies the symptom. Nothing is more harmful than a predominantly local therapy. Isolation and psychotherapy are the sovereign remedies in these cases. After a thorough examination has been made and the absence of organic disease has been determined the patient should be told that the joint trouble is nervous in origin, and that, in the physician's opinion, there is no reason why it should not speedily get well. After a few days of complete separation from the family and friends, and when "medical obedience" has been fairly well established (frequently easily obtainable by encouragement and by keeping the patient for a short time in bed on a diet consisting exclusively of milk), the patient's intellect and will are to be appealed to by "persuasion." Passive

movements of the joints are to be begun and gradually increased; hydrotherapy and electrotherapy may be used as adjuvants. After a few days the patient may be induced voluntarily to move the joints a little, and very soon normal motility may be regained. The patient, through occupation, therapy and will-gymnastics, should be taught gradually to improve in self-control.

It is surprising to see the "wonderful" transformations of which psychoneurotics are capable when simple measures of the kind mentioned are employed. The length of time the symptom has persisted need not make one skeptical of recovery. The miracles of St. Anne de Beauprè and of Lourdes, of osteopathy and of Christian science, amaze the laity. Just as marvelous cures, but more lasting ones, attend the efforts of the physician who knows how to recognize quickly and to treat rationally the psychoneurotic manifestations.

DISLOCATION OF THE ANKLE.

Dislocation of the ankle below the astragalus is considered by three authors—MORIAN, LUXEMBOURG, and REISMANN (*Deutsche Zeitschrift für Chirurgie,* Band lxxxvi, 2). Each reports a case.

Reismann considers the mechanism of the joint and concludes that before the astragalus can be moved on the foot, the articulation between it and the navicular must be torn free. The articular surfaces of the bones are drawn apart when the foot is in extreme pronation and extension, and also in extreme supination and flexion. In the first case overextension tears the navicular from its articulation with the astragalus and forces it backward against the os calcis, tearing this also free. The foot is thus displaced backward on the leg. In the other case the mechanism is much the same, but the foot is forced forward. If the strain is very great the astragalus may be torn from its articulation with the bones of the leg at the same time.

Morian states that the dislocation is rare, but may occur forward or backward or to either side. It may be due to direct or indirect trauma, usually the latter. The symptoms are characteristic. There is increase of the plantar arch behind, and flatfoot in the anterior half of the sole. Supination near the heel gives place to pronation near the toes. The inner border of the foot is shortened. Power of abduction and adduction are lost entirely, and flexion partly. The toes are in overextension and motion of them is limited and painful. Pain is located at the head of the astragalus, which can be felt on the dorsum of the foot. The weight can be borne on the foot but not on the toe. Reduction is usually easy in recent cases. It may be done by drawing the anterior part of the foot forward, in a position of overextension, and applying a cast in a position of flatfoot. If reduction is not possible the astragalus should be resected, as interference with its blood-supply often leads to necrosis and may cause gangrene.

Luxembourg reports two cases. The first was a compound fracture in which the astragalus was so freed from all surrounding structures that it was thought best to resect it. The ankle is now almost stiff, but bears the weight of the body without discomfort. The other case was a partial dislocation with fracture of the neck; the head was excised and a plaster cast applied. The final result was good.

UMBILICAL HERNIA — STRANGULATION OF INTRA-ABDOMINAL GUT.

A peculiar case is reported by LORENZ (*Deutsche Zeitschrift für Chirurgie,* Band lxxxvi, 2), who was not able to find described one exactly like it.

The patient had an umbilical hernia of several years' standing, and was suddenly attacked by pain in the hernia and symptoms of ileus. The hernia was irreducible, but soft, and therefore not incarcerated. Occurrence of fecal vomiting determined operation. The sac contained a large amount of clear serum, a single healthy looking loop of bowel, and a round mass, which resembled a strangulated ovary. It was free at the neck of the sac, but con-

stricted immediately outside by passing through an abnormal opening in the omentum. The omentum was turned over, and it was seen that a spot or portion of mesentery belonging to a portion of bowel outside the hernia had been forced into the hole and was constricted. The opening was enlarged, and the corresponding bowel found free in the abdomen, with beginning peritonitis. The appearance of the gut improved so rapidly that the abdomen was closed. Recovery was perfect. The author suggests that this mesentery lay like an apron before the mouth of the sac, and was forced into it by a loop of bowel, which later escaped as the pressure increased.

DRAINAGE IN OPERATIONS UPON THE BILIARY SYSTEM.

LILIENTHAL (*New York Medical Journal,* May 18, 1907) says that despite the earnest work of numerous surgeons the surgery of the biliary tract is in an unfinished state. The number of deaths in uncomplicated cases is still great. The impressions recited by the author are based upon more than three hundred cases of nearly every known variety. He has reached the conclusion that in obstructive jaundice, especially the chronic variety, the skilful employment of biliary drainage is the most essential measure in reducing operative mortality. The longer the jaundice has existed the greater must be the caution in relieving the condition. Chronic obstruction leads to secondary cirrhosis of the liver with its attendant dangers, not the least of which is hemorrhage; also long-continued blocking of the liver may be followed by reflex suppression of bile consequent upon surgical drainage through its duct, with death from cholemia. The sudden relief of a liver tremendously engorged by long-continued common-duct obstruction has led to death from shock. In chronic profound obstructive jaundice the proper method of procedure would be to secure drainage of a gradual character. If the size and condition of the gall-bladder permits, a simple cholecystostomy should be performed as a temporary measure, making the stoma very small so as to prevent the too sudden relief of pressure. The operation for radical cure should be postponed until the conditions have become favorable. Great caution should be exercised to prevent adhesions which might embarrass the operator at the subsequent step. Gauze packing should be dispensed with, and the parts should be handled gently with rubber gloves.

FRACTURE OF THE SCAPHOID.

This fracture is fairly common, but was not often recognized before the introduction of the *x*-ray. The other bones of the carpus are very rarely broken. Several cases with radiograms are given by HIRSCH (*Deutsche Zeitschrift für Chirurgie,* Band lxxxvi, 2).

There are two forms: (1) Intracapsular, across the middle of the bone at right angles to it. This shows little or no tendency to heal by bony union, and leads either to a false joint in the middle of the bone or interferes with the motion of the wrist. It may even lead to a sort of arthritis deformans. (2) Splitting off of the tuberosity by traction on the ligament from the styloid process of the radius. This is extracapsular and heals by bony union. The fracture is usually caused by a fall on the hand stretched out, in ulnar flexion or in radial flexion, with the fingers spread apart. The symptoms are not diagnostic, with the exception of *x*-ray examination, which with the hand in extreme ulnar flexion will show the fragments separated. The usual symptoms are swelling of the wrist, most marked on the radial side, limited motion of the wrist, especially of dorsal flexion (diagnosis from sprain), and tenderness in the "snuff-box" between the tendons of the extensors of the thumb. The "snuff-box" seems to be filled up, and the branches of the radial artery are plainly felt in it. If the surgeon's thumb and forefinger are placed on the palmar and dorsal surfaces of the scaphoid, and the injured hand placed in ulnar flexion, a point of tenderness will

be found at the bottom of the space. Crepitation is rarely elicited.

The symptoms of an old ununited fracture are similar. The hand is kept in radial flexion, and the wrist is quite stiff and painful on motion. There is the same tenderness in the "snuff-box." After slight traumatism there may be acute attacks of pain in the wrist with swelling and disability, the condition gradually returning to the latent state if the joint is not used.

The treatment of fracture of the tuberosity is the application of a splint with the hand in radial flexion; immobilization for two to three weeks. Fracture of the body does not heal in a splint, so an effort must be made to preserve a useful wrist by producing a painless false joint between the two fragments. Cold and massage, with temporary extension, will help this. If this is impossible, or if the fragments are widely separated, it is best to expose the bone by a long incision in the "snuff-box" and excise the radial part. This should leave a useful joint.

THE SURGICAL TREATMENT OF TRIFACIAL NEURALGIA.

F. MARTIN (*Annals of Surgery*, May, 1907) reports eight cases of trifacial neuralgia treated by resection of the Gasserian ganglion. Six cases were entirely cured without any operative complication; one died from pneumonia on the fifth day after operation; and one died the morning after operation from shock due to hemorrhage excited in the course of the operation. It has been the author's experience that recurrence follows all peripheral operations. In some of his cases of removal of the Gasserian ganglion the operation has been so recent that he is unable to predict whether or not cure will be permanent. It seems pretty well settled that permanent cure results from removal of the entire ganglion. The great drawback to the advancement of the operation is the high mortality attending it. The key-note to the success of the operation is the avoidance of hemorrhage; this is at times exceedingly difficult. The operation is one which requires all the dexterity a skilful operator can possess, nor is he justified in demonstrating it to a class, for in doing so he increases the risk of hemorrhage and endangers the patient. The division of the sensory root back of the ganglion is the most important step in the operation.

LESIONS ASSOCIATED WITH GUNSHOT WOUNDS OF THE STOMACH —TREATMENT.

W. MARTIN (*Annals of Surgery*, May, 1907) says that a classification which groups under the title of gunshot wounds of the stomach a case, for example, in which the bullet has passed through the diaphragm, the lung, the stomach, the transverse colon, and has remained embedded in the pancreas, is unsatisfactory, for the fatal outcome in such a case is no more due to the stomach injury than to the lesions in the other organs. The author reports two cases of his own and reviews the literature of the subject. He concludes that the complicating lesions are in most instances of graver importance than the gastric injury, and that to speak of the high mortality of gunshot wounds of the stomach is misleading. In any gunshot wound it is the sum of the injuries inflicted on the different organs and structures which is responsible for the gravity of the condition. To-day when it is the rule to operate immediately, there is little opportunity of making an accurate diagnosis of the organs injured; one cannot wait for the vomiting of blood, or even for the onset of rigidity in the abdomen. The situation of the small perforating wound furnishes the only guide. If this is over the area of gastric vulnerability, extending on the left side from the level of the fifth rib in the mammary line to a line passing through the extremities of the tenth rib anteriorly, and from the eighth rib in the scapular line to the level of the spinous process of the second lumbar vertebra posteriorly, then one may expect a number of important organs and structures to be wounded; and it seems of practical advan-

tage to think of the injuries recorded in similar cases.

In an operation undertaken for a wound in this area it is necessary to think of all the structures likely to be injured, and to be prepared not only to suture a wound in the stomach, but to treat any of the associated injuries. A reduction in the fatalities should go hand in hand with the recognition and treatment of these complicating lesions. In the twenty-five cases tabulated this is clearly shown. In most of them there were associated injuries of graver significance than the stomach injury; in two, splenectomy was performed; in two, thoracotomy as well as laparotomy; in five, the diaphragm was sutured; in one, the twelfth rib was removed and a wound in the kidney packed; in another, the gall-bladder was excised. There were six deaths and nineteen recoveries, or a mortality of less than 25 per cent. Most of the cases were operated on within a few hours of the receipt of the injury, the longest interval being eighteen hours. In this instance the patient recovered. This mortality represents, not deaths occurring from gunshot wounds of the stomach, but those resulting from injuries inflicted by bullets passing through the area of gastric vulnerability.

STAB WOUNDS OF THE HEART.

HARTE (*Annals of Surgery*, May, 1907) states that the old belief that all wounds of the heart are necessarily fatal has been disproven. It is the consensus of opinon among experimenters that the heart after being exposed can be grasped with the hands or forceps and gently compressed with no appreciable effect upon its action, that punctures with knife or needle produce only a temporary irregularity in the heart's action; that wounds produced during systole bleed more than those occurring during diastole; that wounds of the ventricle produced during systole are larger than those produced during diastole; that oblique wounds bleed more than perpendicular wounds; that wounds of the right ventricle are more dangerous, because of the thin ventricular wall and because the blood in the right heart coagulates more slowly; that wounds of the heart heal kindly, and that the cicatrix is complete in two weeks; that interrupted sutures are better than continuous ones; that the material enclosed in the grasp of the sutures undergoes atrophy and is replaced by scar tissue; that superficial stitches are less liable to tear out than deeper ones, and that the stitches should be inserted and tied during diastole, because of the danger of tearing out during systole. Some of these opinions are of practical importance, while others are theoretical and impossible to carry into effect. In penetrating wounds of the heart, if there be no surgical intervention, the individual will die from anemia, compression of the heart, or, later, from sepsis or functional incompetence. Many cases which succumb in a short time would recover if they could have prompt surgical aid.

In operating an anesthetic is imperative. Except when the patient is unconscious ether is the best anesthetic. Preparations should be made beforehand that the operation may be done quickly, as time is an important factor. If possible the incision should be so planned as not to involve the pleura. The formal osteoplastic flap is liable to result in injury to the pleura. Two or more costal cartilages and, if necessary, a portion of the rib can be divided and reflected back over the sternum. With care the pericardium and pleura can be separated from the overlying structures and the pericardium opened without injury to the pleura. Loose blood and clots should be sponged out, when usually the bleeding point can be seen or felt and bleeding controlled by pressure until sutures can be introduced. The best suture material is fine chromicized catgut introduced with a sharply curved needle. Each stitch should be left long after tying as the ends assist as tractors. The heart's action is very erratic and rapid, and the stitches are difficult of introduction. In wounds of the ventricle the stitches must be introduced deeply to insure approximation. In the case of the auricle through-and-through sutures are

imperative as well as several superficial ones. Everything should be sacrificed to secure exact approximation. No harm results from catching branches of the coronary artery in the sutures. The pericardium should be closed with continuous catgut suture without drainage. If the lung is collapsed, the pleural cavity should be cleared of clots and provision made for drainage at a dependent portion of the chest, provided the condition of the patient permits. When the heart has lost the support of the lung its action is very violent and irregular. This can be overcome by packing gauze pads wet with normal salt solution into the pleural cavity to give support to the heart. The after-treatment is routine, in which small doses of morphine may be used with advantage.

Harte reports the case of a man with a stab-wound of the left auricle which he sutured. The pleura had also been opened by the injury and the lung was collapsed. The patient developed empyema a few days later, and finally died of this condition nearly a month after the receipt of the injury. Autopsy showed that the heart wound had healed, and the endocardium and valves were normal.

TREATMENT OF A HEMOPHILIC KNEE-JOINT BY OPERATION AND THYROID.

RUGH (*Annals of Surgery*, May, 1907) reports a case of hemophilic knee-joint treated first by incision under the supposition that the trouble was inflammatory, and later successfully by thyroid extract after other remedies had failed. The patient was a man, aged twenty-two years, who had had for ten years recurrent attacks of swelling and pain of the left knee, usually following slight traumatism, and incidentally free bleeding from bites of the tongue or from the nose. After treating the joint by ointments and casts for a time without good results incision was made on the inner side of the joint, and it was found that the tissues were blood-stained and the synovial fringes were hypertrophied and softened as in hemophilia. There was not much bleeding at the operation, but on dressing the wound on various occasions subsequently bleeding was very profuse. Treatment was carried out by means of calcium chloride, gelatin, and adrenalin without any good effect, except that when gelatin was given the blood which poured out coagulated very rapidly and firmly. The patient meanwhile became very anemic. Finally thyroid extract was given in doses of 5 grains each three times a day. The good effect was noticed at once by lessening of pain, which had hitherto been severe, and diminution in loss of blood. In eight days bleeding had ceased, and the condition of the blood had greatly improved. For the past five months the man has been at his usual occupation without any recurrence.

REVIEW OF A RECENT SERIES OF OPERATIONS UPON THE STOMACH.

BREWER (*Annals of Surgery*, May, 1907) reports the results of seventeen gastric operations recently performed in his service, sixteen by himself and one by another surgeon, for conditions thought before operation to be chronic gastric ulcer or benign stenosis. The first group numbers twelve cases, and consists of those in which a definite anatomical lesion was demonstrated. Eleven of these recovered, and one died on the sixth day of pneumonia. Of the eleven which were immediately relieved of their symptoms, nine are known to have remained well, one died six months later, probably of malignant disease, and one other continues to suffer and lose weight. In all cases in this group operation was clearly indicated. In all the gastroenterostomy cases the posterior no-loop operation was performed, and in ten of the twelve the suture method was followed. In no instance was there any functional disturbance due to side-tracking the duodenum. In no case was there any evidence of sepsis or peritoneal irritation, and none of the cases showed postoperative shock. In the only fatal case of the series a severe hemorrhage occurred in the stomach immediately after the operation. This soon ceased, but

on the fourth day the patient developed an extremely toxic lobar pneumonia and died in forty-eight hours.

The second group of cases numbers five, and consists of those in which no lesion was found. One of these was at once relieved of a hysterical pseudotetany, one died from persistent vomiting, one continued to suffer from the gastric crises of locomotor ataxia, and two from symptoms which could only be classified as a gastric neurosis. The author does not attribute the improvement in two of the cases to the operation, and considers both to be failures from a surgical point of view. Taken as a whole, this series teaches that if one would obtain the best results in this class of patients he should limit his operative intervention to cases in which the evidence of a definite anatomical lesion is well-nigh conclusive.

A REVIEW OF RECENT NEUROLOGICAL SURGERY.

ARMOUR (*The Practitioner*, May, 1907) quotes at length Cushing's paper concerning surgical intervention for the intracranial hemorrhages of the new-born. This paper, dealing particularly with the so-called birth palsies, points out that the hemorrhage is usually of venous origin and follows the rupture of some of the delicate and poorly supported radicles of the cerebral cortex. It may be due to great trauma or to a strain upon the vessels by the venous stasis of postpartum asphyxiation. The vessels most likely to be ruptured are those which ascend over the cortex and enter the longitudinal sinus in the midcerebral region. Those veins, which lie in the subarachnoid space and for the most part are protected from rupture by following the sulci as they ascend toward the middle line, leave this protection when near the vertex, and, apparently with no support whatever, cross the subdural space to enter the dura at the outer edge of the sinus. In infants these unsupported vessels are the only connection between the leptomeninges of the hemispheres and the dural sheath underlying the sinus.

Although the cranial molding may take place to a considerable extent without putting any great strain on these lateral cerebral veins, any undue overlapping could readily tear one or more of them away from the sinus. In this way Cushing accounts for the fact that the primary effusion, and therefore the thicker portion of the clot, is commonly median, and implicates primarily and most seriously the centers for the lower extremities. The extravasation he holds is usually limited to one side, though it may be bilateral, nor should the condition be difficult to diagnose. Should there be any serious doubt as to the actual nature of the lesion it might be decided by lumbar puncture, when free corpuscles will be found in the fluid of the lumbar meninges. This would serve to differentiate between hemorrhagic and infectious cases, where diagnostic difficulty is present. A history of difficult labor or of postpartum asphyxiation has an important bearing upon diagnosis. Among the objective signs is bulging of the fontanels—indeed, they may be so tight as to show no pulsation. Convulsions are frequent, and if they do not appear for several days after birth may be unilateral. There may also be an undue reflex activity, the child starting or twitching in a convulsive way in response to any sensory stimulus. Ocular palsies or inequality of the size of the pupils are not uncommon. Medullary symptoms are sometimes observed, such as alterations from the normal in the cardiac and respiratory rhythms. Evidences of paralysis are rare. According to Gowers two-thirds of the cases exhibit in their terminal aspects epilepsy, even when their intelligence does not suffer. Convulsions are often Jacksonian in character, akin in all respects to those which follow the cortical changes resulting from criminal injuries with hemorrhage in adult life.

Cushing's report covers four cases. He raised an osteoplastic flap, including the entire parietal bone, exhibiting a plum-colored dura which on being opened disclosed a clot. This was lifted off in large pieces from the exposed area of the cortex, and a considerable quantity of clotted blood,

which extended over the frontal and occipital regions, was irrigated out with warm saline solution.

In another case the operation was done on both sides. Cushing believes that a newborn child, with a proper regard for hemostasis and careful avoidance of exposure, will stand a cranial operation well. He notes that coagulation time is as rapid as in the adult, and holds that since the operation of craniectomy in the newly-born child is comparatively free from the immediate risk of death the procedure is well worth adopting, in view of the crippling later consequences of meningeal birth hemorrhages.

Armour further quotes Sachs's paper on "Indications for Operative Treatment in Serious Head Injuries," giving as a contribution to modern cerebral surgery this illuminating sentence: "If the external evidence points to one side and the symptoms to the other, consider both, take the side of external injury first, but try to reach the other as well."

Bullard is further quoted to the effect that operation should be performed in adults whenever the unconsciousness, after severe head injury, lasts more than twelve hours, and when it seems clear that the unconsciousness is due to an injury and not to alcohol or other causes, or complications. He admits, however, that this rule is not universal, while Walton is of the opinion that the following symptoms in themselves are not sufficient to justify operation: (1) Continued unconsciousness, not deepening; (2) paralysis appearing immediately, and not increasing; (3) inequality of pupils; (4) delirium and restlessness; (5) the presence of fever. Among the conditions indicating operation he included: (1) Deepening initial unconsciousness, or unconsciousness coming on after an interval, and deepening into coma; if no other localizing sign accompanies, the seat of injury should be chosen for operation. (2) The spread or increase of initial paralysis after an interval. This points to hemorrhage. In the presence of this condition, the possibility of bruising and edema alone being present does not suffice to contraindicate operation. (3) Jacksonian attacks. (4) Dilated pupil on one side, accompanied by paralysis or spasm upon the other (middle meningeal hemorrhage). (5) Punctured or definitely depressed skull. (6) The question whether simple fissures and moderate depressions of the skull require operation demands surgical rather than neurological judgment. The benefit of the doubt should be given to operation, in view of the many cases in which exploration of such injuries reveals wide-spread and serious conditions likely to prove a future menace.

FRACTURES ABOUT THE ELBOW-JOINT.

CARLESS (*Practitioner*, May, 1907) describes three chief forms of transverse fracture at the lower end of the humerus. The one, supracondyloid, may occur in children or adults as the result of falls on the elbow, or indirectly as the result of falls upon the outstretched hand whilst the elbow is bent. The displacement is usually backward. In this fracture two points need notice: first, that the line of the lesion is well above the joint, and, therefore, passive and active movements are not necessary at as early a stage as if the joint were involved; and secondly, that the internal angular splint is a very inefficient contrivance for treatment. Replacement is usually easy, being accomplished by bending the arm and making traction upon the hand, whilst the olecranon is pushed downward and forward by the thumbs. Carless prefers a posterior poroplastic or plaster-of-Paris gutter splint, which is molded to the limb, and a short anterior splint may be conjoined.

Operation is seldom required in uncomplicated cases. When the fracture is complicated by vertical cleft, or split in the shape of a T or a Y, displacement does not necessarily ensue if the periosteal flap be not torn. If, however, this be badly lacerated there may be displacement inward and outward and some displacement of the elbow may result. A case of this sort should always be submitted to operation

in order to fix the fragments one to the other, even if it be unnecessary to secure the united fragments to the shaft. The introduction of a screw through the fragments will suffice to fix them satisfactorily, when flexion to a little more than a right angle and the use of anteroposterior splints will suffice to bring the case to a satisfactory conclusion. In other cases the comminution of the lower end of the humerus may be more extensive, and, indeed, it may be crushed into fragments. Even if such a condition exist union will occur, but it will be associated almost certainly with the development of much callus, which will obliterate the olecranon and coronoid fossæ, besides being accompanied by intra-articular adhesions of such a character as to interfere permanently with the movements of the joint. It is probable that subperiosteal resection of the lower end of the humerus will be the best treatment that can be adopted, if it be found on exploration that the fragments cannot be satisfactorily fixed to one another by screws, nails, or pegs. Carless notes that the recorded results of such operations have been encouraging.

The second form of supracondyloid fracture is seen in infants and young children, in the form of a complete separation of the lower epiphysis. Before the age of three years this fragment is purely cartilaginous and will include both condyles and epicondyles. The line of cleavage is well above the joint, so that the lesion is extra-articular. Radiography shows nothing excepting backward displacement of the ulna and radius.

Much commoner than this is the separation of the epiphysis in children. In it also the line of cleavage generally extends into the diaphysis on one side or the other, so that the lesion is partly a separated epiphysis, partly a fracture. The obliquity in this fracture is almost always downward and forward. In spite of the encroachment of the diaphysis the general features of the epiphyseal separation are largely maintained. Thus the periosteum remains firmly attached to the epiphyseal cartilage, but is stripped off the diaphysis for a considerable distance upward, and in the cavity thus formed blood collects, constituting an important element in the swelling which almost always follows this injury. The displacement is generally backward, but occasionally forward. The elbow-joint itself is rarely involved in this lesion, though in older children it is more liable to injury than in the younger, owing to the downgrowth of the diaphysis on the inner side, whereby the internal epicondyle is separated from the rest of the epiphysis.

Carless has not the slightest doubt that the position for the treatment of these cases is one of acute flexion, one reason for which is that the slight limitation in extension is a less serious sequel than impairment in the power of flexion. There are certain cases which can be readily reduced into position with or without an anesthetic, with which full flexion can be easily secured. Reduction is accomplished by traction made upon the forearm, which is gently but forcibly bent, whilst pressure upon the olecranon forward and downward carries the fragment into place. The forearm is flexed acutely with the hand supinated, and is bandaged to the arm so that the hand is approximated toward the shoulder. After its fixation in this position rotation inward from the shoulder may be allowed, and the arm then bound to the side. The adoption of this procedure prevents the development of the ugly gun-stock deformity. The arm is kept in this position for twelve or fourteen days, and then placed in a hollow poroplastic gutter splint, hinged at the elbow in such a way as to reproduce the carrying angle. The amount of movement is graduated by tapes passed through holes on either side of the upper and lower segments, the range of movement is gradually increased, and in this way it is possible to gain excellent functional results.

When the case is not seen until considerable swelling has taken place, it is often impossible to effect reduction, and the adoption of the acutely flexed position is impracticable. Under such circumstances

the operative treatment is desirable. The surgeon should cut down to the site of fracture on either side, dividing the periosteum, so as to allow the blood collected beneath it to escape, and should then manipulate the fragments into position, and put the limb up in acute flexion. Difficulty at times arises owing to the irregular edges of the fragment, and in some cases it may be necessary to clip off projecting spicules of bone. This is to be avoided if possible, as the irregularities help to maintain the fragments in position, when once the displacement has been overcome. After reduction the adoption of the acutely flexed position usually suffices to maintain apposition, and the introduction of retentive appliances, such as wire or screws or nails, is generally superfluous. The lateral incisions are closed by a stitch or two, and the limb is put up in the usual way. The bad results of imperfect treatment are summarized by Carless as follows:

Limitation of movement may involve either the hinge action of the elbow or the rotation of the superior radioulnar articulation. It may arise from the presence of intra-articular adhesions, fibrous or osseous; from the filling up of the olecranon or coronoid fossæ by callus; or from the actual displacement of bony fragments.

Non-restoration of the carrying angle is a result which is often seen and cannot always be prevented. The result may be that the forearm and arm are quite straight in the same axis, the so-called "gun-stock deformity," or there may be a definite angular deformity, known as cubitus varus, or valgus, as the case may be.

Cubitus valgus is to be looked on as an exaggeration of the normal carrying angle. It also usually results from imperfect treatment of an epiphyseal separation involving the lower end of the bone. The dependence of these two deformities upon such transverse lesions is emphasized by Cotton, who investigated the origin of a considerable number of them. In the valgoid condition the chief trouble often arises from the fact that the inner condyle is unduly large and prominent, and carries with it the ulnar nerve, which is thereby exposed to injury. A case of this sort came under the notice of Carless not long ago suffering from traumatic neuritis, which was recurring constantly as the result of slight injuries.

Imperfect development of the bones may result from these epiphyseal lesions if they are not correctly restored to position.

Paralytic conditions, resulting from nerve lesions, are also not unknown. The ulnar nerve is exposed to injury in any fracture which involves the inner condyle, whilst the displacement backward of the lower fragment causes undue pressure anteriorly by means of the lower end of the shaft, and the median nerve may be thereby involved. Mühsam has laid stress on these lesions in a recent communication (*Centralblatt für Chirurgie,* 1906, No. 32, p. 877).

The so-called ischemic contracture is also occasionally seen to follow these lesions, but it must be clearly understood that it is not due to nerve pressure or to splint pressure, but, as originally described by Littlewood, of Leeds, is due to an intrinsic shortening of the muscles of the forearm resulting from a fibrosing type of myositis. A case of this type was seen by Carless a little time since, in which no splints had been used which could exercise pressure upon the forearm.

Fracture of the external condyle is an injury which Carless believes requires early operation to gain good results. The outer is the one more frequently involved as the result of direct violence. The line of fracture runs into the elbow-joint, reaching it between the trochlear surface and the capitellum; the fragment thus detached is drawn slightly downward and rotated forward by the muscles attached thereto. Crepitus can generally be obtained without much difficulty, but the arm becomes rapidly swollen, so that reposition without an operation is almost impossible, though acute flexion is the position which most encourages this. Imperfect union leads to modification of the carrying angle, but

chiefly to imperfect flexion of the joint, owing to the anterior projection of the fragment. By means of a curved incision over the condyle the bony fragment can be exposed and brought into perfect apposition and secured by means of a screw. Fractures of the internal condyle and the trochlear surface are much less common; the fragment generally travels backward and upward, possibly a little inward, carrying the ulnar and articular with it, thus producing angular deformity. On theoretical grounds this fracture also should be treated by open operation.

Separation of the internal epicondyle is comparatively frequent. Usually it is displaced downward, owing to the drag of the muscles arising from it. Direct treatment is by operation. A small incision will enable the fragment to be apposed to the shaft; and then it is easily fixed by the introduction either of a nail or of a screw.

As for fracture of the olecranon, there is only one way of dealing with these injuries when the periosteal, tendinous, and fascial tissues are involved to such an extent as to allow of complete separation of the fragment, and that consists in operation. The fracture is usually transverse and situated near the base of the process; should there be no separation, immobilization for a week or two to allow the parts to settle down, and then massage and passive movements to commence with, and subsequently active movements, will suffice to obtain an excellent result. No splints are required, but the arm should be kept in a sling for a while.

When there is distinct separation union by silver wire is indicated. Thereafter full range of movement is practiced at the end of fourteen days.

Fractures of the head of the radius also require operation in order to secure favorable results if there is any separation of the fragments. Fissures of the bone can usually be left, and treated by massage and early mobilization; but if the head is comminuted, or when it is separated either by a transverse or a vertical fissure, then the only chance of preservation of the function is by operation. It may be possible to fix the fragments into position by silver wire. In the majority of cases excision of the head will be required. Even if the fragment has been wired, there is often a great deal of reaction and some development of callus, which interferes with union.

ABSCESS OF THE MESENTERIC LYMPH GLANDS.

BAYARD HOLMES (*Chicago Medical Record*, May 15, 1907) notes that secondary infection from the mesenteric lymph gland and its ultimate extension or rupture into the peritoneal cavity must be considered, in summing up the etiology of peritonitis either limited or diffuse. He states that there are two distinct clinical conditions which give rise to suppurative adenitis. In the first instance the adenitis is the result of a suppurative process primarily in the appendix, the gall-bladder, or some part of the genito-urinary tract. In the second instance it is a complication of typhoid fever, resulting either as a typhoid mixed infection adenitis or as an adenitis due to the typhoid germ itself. The production of a suppurative adenitis is not different from that in the groin or axilla. The treatment in case of rupture is by prompt laparotomy and drainage.

OPENING THE CRANIAL CAVITY FOR THE REMOVAL OF TUMORS.

FRANK (*Chicago Medical Recorder*, May, 1907) prepares patients for one or two days by the administration of bromides. He shaves not only the scalp but the eyebrows. He prefers chloroform as an anesthetic, but wisely advises against the use of any if the patient be in a comatose condition. He gives ¼ to ½ grain of morphine half an hour before operation. He states that as a rule Esmarch's constrictor is not necessary for the temporary control of hemorrhage from the scalp. As to the method of opening the skull he states that the use of the trephine while

possessing some advantages had in its field of usefulness become very limited owing to newer methods. The chisel and mallet meet with his unqualified indorsement. Frank's advice will be appreciated when it is stated that the incision of the scalp should be so planned that when the flap is made it should point in a downward direction to facilitate natural drainage, and that the division of large blood-vessels should be avoided, if possible.

With the former of these two recommendations the need of retaining the vitality of the large flap will sometimes interfere.

PEPTIC ULCER FOLLOWING GASTRO-JEJUNOSTOMY.

HAMANN (*Cleveland Medical Journal*, May, 1907) records the case of a man, forty-eight years old, who because of symptoms of gastric ulcer was subjected to an anterior gastrojejunostomy and also an enteroenterostomy, the junction between the two limbs of the intestinal loops being made about four inches below the stomach. A Murphy button was used in both anastomoses, and reënforcing sutures of silk. The twenty-first day after operation this patient complained of epigastric pain, and on palpation an indistinct mass could be felt in the epigastric and left hypochondriac regions, which was tender upon pressure. Three days later he went home, his symptoms not being at all violent, and two days later he died quite suddenly, in the absence of alarming symptoms. Indeed, the day preceding his death he felt well.

Autopsy showed perfect union between the intestine and stomach and the button *in situ*, and an ulcer of the jejunum just beyond its junction with the stomach, but in such position that it could not have been caused by pressure of the button. There was general peritonitis, and remains of food were found in the peritoneal cavity. The gastric mucosa presented lesions which had been called erosions, no distinct round ulcer being present.

Hamann quotes Gosset's collection of thirty-one cases of peptic ulcer following operation. Twenty-nine of these occurred in males. The time at which the ulcer appeared, or rather its symptoms developed, varied from ten hours to seven years. There were ten deaths and nineteen recoveries; in two the results were not stated. All these cases of peptic ulcer followed operation for benign diseases. Of twenty-one of the cases in which these observations were made there was hyperchlorhydria in seventeen.

Tiegel has classified the cases of peptic ulcer into two groups: First, a group in which there are no symptoms at all until perforation takes place; thereupon, without any prodromes, the familiar evidences of peritonitis. Secondly, a group in which after a shorter or longer interval of health after operation the symptoms of gastric ulcer appear; there are also signs of adhesive peritonitis, the anterior abdominal wall becomes infiltrated, and an indistinct mass can be felt. To this group most of Gosset's cases belong, and it exhibits a lower mortality than the first group.

The treatment of peptic ulcer following gastroenterostomy is based on general principles applicable to treatment of ulcer of the stomach.

EARLY ASPIRATION IN PLEURISY WITH EFFUSION.

YARIAN (*Cleveland Medical Journal*, May, 1907) holds that aspiration of pleuritic effusions is better done early than late; that local measures, internal medication, and all other temporizing means are really of secondary importance except in the smallest collections of fluid, or those which are not accompanied by symptoms of any importance and which yield readily to other treatment. He quotes, as fully expressing his views, from Forchheimer to the effect that the only local measure which fulfils all the indications required for pleurisy with non-purulent effusion is the operative removal of the fluid. In all cases of primary pleurisy it is always indicated. It matters not whether the fluid has reached the tip of the first rib, whether the patient is in immediate danger or not. In secondary pleurisy the vital indication

may be looked into for surgical intervention; but especially in the latter stages of myocardial insufficiency should the fluid be removed from the chest immediately after its presence is detected.

Dieulafoy could find no case of death after aspiration in which not more than 1200 cubic centimeters was withdrawn at one time, from which he argues that not more than 1000 cubic centimeters should be removed through a small needle with very little negative pressure in the bottle. He puts his patient in the recumbent or semi-recumbent position, and ceases withdrawing the fluid when the symptoms of faintness come on, repeating the procedure if necessary for the complete emptying of the chest.

SOME SURGICAL ASPECTS OF EMPYEMA.

LUND (*Boston Medical and Surgical Journal,* April 18, 1907) says that the belief that a pneumococcus empyema will get well with repeated tappings and does not require rib resection has, with numerous other fallacies regarding the treatment of empyema, been exploded. There is every reason for early operation in all forms of empyema. In the first place, the patient is usually attacked by the disease directly on the heels of a severe and exhausting pneumonia, and is in no condition to stand the drain of a long-continued infection; in the second place, every day that passes after the development of pus in the chest exhausts the patient by the absorption of toxins; in the third place, the lamentable accident of bursting into a bronchus is, as time goes on, increasingly likely to occur; in the fourth place, in case the abscess becomes walled off and the toxic absorption is thereby lessened, those very protective adhesions, while admirable for the purpose for which they are intended, as they become firmer with time and more completely organized, serve in a most efficient manner to prevent expansion of the compressed lung after the chest is opened. All this takes no account of increasing embarrassment of the respiration and heart's action which accompanies the filling up of the pleura with pus, and the danger that long-continued compression of the lung may so consolidate it as to permanently obliterate many of the air cells and put an end to the possibility of expansion.

In establishing a diagnosis by means of the needle one should not be satisfied if the first attempt brings no pus, but the needle should be inserted in different directions or even at different places. The writer believes that the best point for tapping as well as for resection is at the eighth rib posteriorly just outside the angle of the scapula, with the arm by the side. The chest will drain better at this point than anywhere else. The interspaces are narrower here and the rib thicker but even, so the operation of resection is easy enough. But little preparation of the skin is needed. Local anesthesia will answer, but general anesthesia with ether very carefully given on the operating table, with the patient in the position desired for operation, is preferred.

All preparation for operation should have been made before the anesthetic is started, so that it may be done quickly. About three inches of the eighth rib is removed at the site referred to, after carefully stripping off the periosteun. Then an incision one inch long is made in the pleura, and this is enlarged with the fingers so as to correspond in length with the piece of rib removed. This being done the anesthetic is stopped. The hand should control the outflow of pus so that it may not be too rapid. The finger is introduced into the cavity and any masses of fibrin removed. The best form of drainage tube is a piece of rubber tube one-half to three-fourths inch in diameter with a hole cut in the side and doubled at the point where this hole is. The tube should be just long enough to reach to the inside of the chest wall, and should be securely fastened to the skin to keep it from slipping in. The tube drainage should be kept up until the cavity within the chest has become very small. This may require only a short time, or perhaps months. The au-

thor has used irrigations of the chest in a number of cases and has never noticed any bad results therefrom.

Nursing does much for or against these patients. They should sit up in bed from the first, because in the sitting position drainage is better and respiration easier. They should be taken into the fresh air and sunlight as soon as possible. The use of respiratory measures to promote expansion of the lung, especially the blowing of water from one bottle into another through a tube, is very valuable.

TREATMENT OF THE TYPHOID SPINE.

GIBNEY (*New York Medical Journal,* April 20, 1907) states that he has had fairly good results in the treatment of typhoid spine in a reasonable length of time by resorting to fixation of the column, avoidance of trauma, the free use of the Paquelin cautery, and the subsequent employment of massage and graded exercises. The value of the cautery as a counter-irritant has proved so great in the writer's hands that he feels justified in recommending it above all other counter-irritants. The plaster-of-Paris jacket or corset has not proved so valuable an agent as has the simple Knight spinal brace or the posterior spinal assistant of Taylor. The crisscross strapping with zinc oxide adhesive plaster has been a valuable adjunct, especially in the milder forms of this disease. Potassium iodide has been given in certain cases, but not with any definite results. Where deformity exists, as it undoubtedly does in certain instances, it is necessary to wear apparatus for longer periods. The Paquelin cautery is insisted upon as a regular line of treatment as long as tenderness and pain on movement exist. Even after all tenderness subsides it is a good plan to employ the cautery occasionally, say once a week or once a fortnight. It has been shown that even these deformities and areas of infiltration, bony or muscular, disappear after a while, and fortified by this assurance the surgeon can decide when to begin the convalescing part of the treatment, namely, douches, hot baths, and systematic graded exercises, the object of which is to correct the stiffness developed in the muscles which have been for a time out of commission, and to restore the tone generally to the spinal column.

Nothing has been said thus far about anodynes and hypnotics. The histories of many of the cases now on record show that these are often necessary, even to the administration of chloroform. The writer does not recall any instance where the drug habit has been acquired. The administration, therefore, of hypnotics must be left to the individual practitioner with the suggestion that, if the aforesaid treatment by fixation and cauterization is carried out, hynotics will not be in great demand.

SURGERY IN DIABETES.

WIENER (*Medical Record,* May 4, 1907) deals exhaustively with the question of performing surgical operations in diabetic subjects. In diseases which arise during the course of diabetes but independently of it, and which require surgical interference, there should be no hesitation about operating, for the wounds will heal and the mortality will be but little different from that seen in non-diabetic patients. When the surgical condition is a result or complication of diabetes, the problem is a much more serious one. The principal dangers to diabetics under surgical procedure are the anesthesia, infection, and hemorrhage. Ether and chloroform should be avoided as much as possible. Nitrous oxide, spinal anesthesia, and local anesthesia should be chosen where possible. The dread of operation and loss of fluid by preliminary purging and fasting contribute to the intercurrence of coma in diabetic patients operated upon. Asepsis should be most rigid, and antiseptics should not be allowed to come into contact with the wound, as they still further lower the vitality of the tissues. In cases of abscesses, to which diabetics are prone, the rule should be early and free incision, as these patients endure suppurative processes very badly.

THE DRAINAGE METHOD IN THE TREATMENT OF ACUTE MIDDLE-EAR DISEASE.

While recognizing the fact that there is still an honest difference of opinion as to whether we shall try what is termed the irrigation method of treatment, or the simple drainage plan, WIENER (*American Journal of Surgery*, May, 1907) expresses his belief that it is to a certain extent possible by means of such a plan, based as it is upon sound and strict surgical principles, to avoid at times not only the persistence of suppuration in the middle ear, but also to reduce to a minimum the chances of more serious complications. The causes which contribute to the persistence of such suppuration within the middle ear are the smallness and unfavorable position of the perforation, if present, preventing the escape of the purulent secretion; the formation of exuberant granulations and polypi; retention and decomposition of the purulent secretion; the formation of adhesions and septa which may partition the ear into several spaces, retaining or enclosing part of the secretion and thus increasing or aggravating the disease; bad hygienic conditions, together with neglect of treatment.

Assuming that the diagnosis of acute otitis media has been confirmed, if the local and constitutional symptoms are of a mild character, relief or even an abatement of the inflammatory process can be obtained at times by the simple instillation of a ten-per-cent solution of carbolic acid in glycerin into the external canal. About ten drops of this solution is dropped into the canal and allowed to remain there for about five minutes, and the canal is then sealed with absorbent cotton. This procedure is repeated about every four hours. A two-per-cent solution of menthol in albolene often answers the same purpose.

When neither of these procedures gives relief, an occlusive wet dressing of a ten-per-cent solution of liquor Burrowii, including a strip of gauze moistened with this same solution placed within the canal and bandaged over the ear, should be tried. Such a dressing usually quiets the patient, and at the same time exerts an antiphlogistic action upon the inflamed surfaces. It will not obscure the clinical picture of the tympanic membrane, nor will it disguise any important symptom which may call for further interference. If within a period of twenty-four hours there is no improvement, and the pain, temperature, and bulging of the tympanic membrane assures us that the condition has become aggravated, then the time for a paracentesis is at hand, and we should not delay. If, on the other hand, the wet dressing does afford relief, and the appearance of the tympanic membrane shows an abatement of the inflammatory process, then the wet dressing should be continued for twenty-four hours. Thereafter the outer dressing should be replaced by a plug of cotton and the gauze within the canal kept moist with the ten-per-cent solution of aluminum acetate for thirty-six hours more, as is deemed necessary. The patient should be cautioned not to expose himself for about one week, after which the Politzer bag should be employed to establish a normal relation of the parts.

Should the case be one in which a paracentesis is indicated we should proceed in the following manner: First, in order that the operation may be properly performed, there must be a proper fixation of the head with good illumination. Therefore, whenever it is possible, place such patients under the influence of a general anesthetic. The operation is extremely painful, and it is almost an impossibility to fix the head and hold it firmly without the assistance of such an agent. In young infants and children, in whom it is difficult at times to obtain a proper view of the membrane, and in whom the insertion of a fair-sized speculum is painful, these children will squirm and twist so that it is quite impossible to place the incision accurately. Occasionally one will meet with a case in which a general anesthetic is contraindicated. Here the subcutaneous injection of cocaine and adrenalin, as practiced by Neuman in operations upon the middle ear,

will often answer the purpose. The injection is preceded by spraying the canal with chloride of ethyl. The writer has used this method in private and in clinical practice, but cannot recommend it as a routine procedure, as it too often fails to produce complete anesthesia.

For cleansing the external canal, a weak solution of lysol or a 1:500 solution of bichloride of mercury in alcohol will answer the purpose. It is well to remember that a thoroughly aseptic field in this region is an impossibility. After the cleansing process is completed, one should introduce under good illumination the largest size speculum that can be inserted without injury to the canal. One is now ready for the incision in the tympanic membrane. The instrument which the author prefers for this purpose is the sickle-shaped knife, mounted preferably in the straight handle. This permits of more delicate and direct manipulation than the knife mounted in the bayonet handle. The incision is made in the lower quadrants of the tympanic membrane, first of all because this region is practically the lowest point for drainage, and secondly, no harm can be done to the promontorial wall if it is abraded. On the other hand, an incision made too deeply in the upper quadrant posteriorly might disturb the ambo-stapes articulation, or in the hurry in which this operation is done, by one with insecure and unskilful hand, it may even do more serious damage. It may happen that the bulb of the jugular vein projects so far within the tympanic cavity that it may be wounded when the incision is made in the lower quadrants. Such an occurrence is so rare that the mere mention of this accident is sufficient. The hemorrhage which may ensue can easily be controlled by tamponing the canal. If any one portion of the tympanic membrane bulges considerably forward that portion should be incised.

If it is not possible to make the incision as described above, one should make a good-sized curved incision extending downward through the posterior quadrants. It is always better to make the incision curvilinear. In this way the edges of the wound are made to gape, due to contraction of the radiating fibers of the tympanic membrane, and thus the perforation remains open. After the incision, the canal should be carefully cleansed of blood and secretion. A piece of gauze rolled in the form of a lead-pencil, varying in thickness according to the size of the canal, should now be used as a drain. These drains are dipped into a ten-per-cent solution of liquor Burrowii and then introduced by means of a delicate forceps into the canal close up to the incision. The projecting end is coiled up within the concha. Over the entire ear and mastoid process a dressing wet with the same solution is placed and covered with rubber tissue, and a bandage is applied. This is allowed to remain for twenty-four hours. Such a dressing accomplishes two things: first, it acts as a drain, and secondly, it serves as an antiphlogistic measure.

In addition to the local treatment, the internal medication resorted to consists in a proper elimination of the contents of the bowels by means of calomel followed by a saline cathartic. After twenty-four hours the outer dressing is removed together with the drain, and the canal carefully wiped with a cotton applicator, which at first is used dry and then moistened with peroxide of hydrogen. In order to remove the secretion from behind the tympanic membrane, the author resorts to aspiration. He employs for this purpose an instrument which he recommended some time ago, but now uses with modifications which enable one to thoroughly sterilize it. It is practically a Siegel's speculum, but is manufactured after the pattern made by Windler, of Berlin. It is constructed so that it may be rendered thoroughly aseptic. One should not try to accomplish this delicate procedure by means of a suction syringe, which might do harm to the delicate structures of the middle ear. The aspiration is continued until the secretion has ceased to appear within the canal or assumes a pinkish hue. Should a drop of blood appear no harm is done, but to con-

tinue beyond this point only causes unnecessary pain, and nothing is gained except to close the perforation with a clot, which defeats the purpose of drainage.

After the aspiration is finished and the canal has been cleansed, the same dressing is applied to the ear and repeated daily three or four times, as is found necessary, until the very acute symptoms have disappeared. The outer dressing is then discontinued and replaced by the drain within the canal, and a piece of absorbent cotton within the concha. This cotton is changed by the patient during the following twenty-four hours whenever it becomes soiled. The canal is then cleansed thoroughly, and aspiration is resorted to once daily by the physician in charge. The strip of gauze within the canal is kept moist with a two-per-cent solution of boric acid, dropped thereon about every two or three hours by the patient or attendant. This serves the purpose of assisting the drainage and keeping the pus in more fluid condition.

As soon as the acute symptoms have subsided, inflation with the Politzer bag is resorted to. The benefit of this is soon apparent by the rapid restoration of the diseased parts to their normal condition. When the secretion has almost ceased, the gauze is discontinued and a very small amount of boric acid is blown into the canal. Almost within forty-eight hours thereafter one will find the canal dry.

In young children such a method of drainage has an especial advantage over irrigation of the canal. Irrigation is painful. The amount of persuasion necessary before it can be properly accomplished in young children, and even in adults at times, is sufficient to tax one's patience. In the majority of cases in which irrigation is used, just what is sought for is not accomplished. Such canals are always found filled with secretion when the time for the next irrigation is due, and soon an eczematous infiltration presents itself at the external orifice. Furthermore, no matter how bland the fluid is, if one will take the pains to observe carefully he will notice that instead of diminishing the edema within the canal, irrigation encourages it. Furthermore, it stimulates the growth of granulation tissue.

In regard to the use of the Politzer bag for inflation after the acute symptoms have subsided, the author has yet to observe the case in which this procedure has caused the slightest aggravation of symptoms. On the contrary, the patients will express themselves as feeling more comfortable. The rapidity with which the discharge lessens, as soon as one is able to resort to this procedure, convinces one of the rationale of this method. It is the only method which assists the Eustachian tube in getting rid of its secretion, and also that which remains in the tympanic cavity after aspiration. Such a tube filled with a stagnating secretion will often exert a baneful effect upon the tympanic cavity, unless properly cleansed. When there is a sufficiently large perforation in the tympanic membrane and the Politzer bag is used, such statements as have been made that pus will be blown into the mastoid and thus cause mastoiditis need hardly be considered. Experiments which have been made upon the cadaver, and the daily experience of those who are constantly treating subacute and chronic conditions of the ear with the Politzer bag, and even the catheter, speak entirely against such an occurrence. The writer states that he has treated over five hundred cases with this method and has not observed a single case in which he could attribute a mastoiditis to this procedure.

ACUTE OBSTRUCTION DUE TO APPENDICITIS.

Although this complication has received very little consideration, it may occur at any period of an appendicitis, and four methods of occurrence are described by HAECKEL (*Deutsche Zeitschrift für Chirurgie,* lxxxvii, 1).

In the acute attack obstruction may follow: (1) Local peritonitis, causing local paralysis of the wall of the bowel. This is usually complicated by adhesions. If

obstruction continues after operation, it may be necessary to expose the bowel and make a fecal fistula in the paralyzed portion. In some cases a second operation is required for the freeing of adhesions. (2) A large abscess may compress the bowel mechanically. This only occurs in narrow spaces, such as the space of Douglas. The treatment is that of the abscess. (3) Loops of intestine, forming the wall of an abscess, become adherent and thus kinked. It is not wise to separate such loops if there is obstruction, as the danger of causing general peritonitis is very great. There is also danger of tearing the wall of the bowel. If there is great distention of the adherent loops, it is safest to make a fecal fistula; if there is little distention, enteroanastomosis of the part above the obstruction with that below is indicated. If the adhesions are not near an abscess they may be cautiously freed, but if there is the least apparent danger of tearing the wall of the bowel, the attempt should be abandoned. (4) Obstruction during the interval between attacks, due to contraction of scar and inflammatory tissue. This may be due to distortion of the gut, or to compression between the appendix, adherent to the abdominal wall, and the wall. In these cases the adhesions may be freed if there is no danger of tearing the bowel, but if the adhesions are firm it is wiser not to attempt to separate them, and to avoid the obstruction by performing enteroanastomosis. There is no indication for resection of the adherent portion. The final results of the two operations, freeing of the adhesions and anastomosis, seem to be equally good.

REVIEWS.

MODERN MEDICINE: ITS THEORY AND PRACTICE. Edited by William Osler, M.D., Assisted by Thomas McCrae, M.D. Volume II, Infectious Diseases. Philadelphia and New York: Lea Bros. & Co., 1907. Pages 828.

The second volume of Osler's Medicine, which is devoted to Infectious Diseases, opens with an introduction by Hektoen. He considers infectious agents and their source, the ways, means, and routes of infection, toxins and bacterio-proteins, the general questions of natural protection and immunity, the general pathology of infectious serum therapy, opsonins and agglutinations. Such an introduction is necessary for an understanding of the articles which follow. It is appropriate to have it come from the head of one of the few great schools of pathology in the country, and it is in every way worthy of Dr. Hektoen. The section will be invaluable to the medical man who has not had the opportunity of keeping abreast with more recent work upon infectious diseases.

The first disease considered is typhoid fever, and the article upon it is by McCrae. The subject is extremely well and thoroughly presented, and the writer is to be congratulated upon the paper, which is probably the best short monograph upon the subject in any language. The English-speaking world has the doubtful privilege of almost a monopoly of the study of typhoid, for the disease has almost disappeared from the great Teutonic and Latin medical centers. The Johns Hopkins Hospital has done by far the largest share of the more recent investigations in typhoid, and we welcome this article as the latest and most complete of all of the admirable additions to the literature which have appeared from that source. The three chapters embrace 130 pages and consider the disease from all standpoints—historical, clinical, pathological, bacteriological, and sociological. The literature is thoroughly given, and yet is well digested, so that it is not oppressive. It would be hopeless to

single out particular sections for commendation or criticism. We note with especial interest, however, the paragraphs upon the clinical value of the Widal recation, those upon the modes of infection, which cover very well the work of the Commission in the Spanish-American War and the various water- and milk-borne epidemics, and the consideration of the sociological side of the disease. The paragraph upon perforation is admirable, as would be expected by any one who is familiar with the literature upon this subject which has appeared from time to time from the Johns Hopkins Hospital.

The chapter upon treatment shows how profoundly the advances in the knowledge of the natural history of typhoid have modified our ideas of treatment. It shows too how broad are the foundations upon which the present revival of therapeutics is based. One would be foolish to style the modern treatment of typhoid expectant when we employ such powerful and effective remedies as the bath treatment, the drinking of water to aid elimination, the attention to rest and feeding, and last, but most important, the constant watch of the patient's condition to detect and control complications. Surely few diseases are so actively and effectively treated. We believe that there is no more intelligent and important chapter in the volume than that upon the treatment of typhoid, and we therefore suggest to Dr. McCrae that the quotation which he has chosen for his capital is misleading. It is by Nathan Smith, and reads: "It does not follow that the disease in all cases requires remedies, or that a patient should necessarily take medicine because he has the disease."

The articles upon relapsing fever and typhus fever are also by McCrae.

The chapters upon smallpox and chickenpox are by Councilman, and are in every way an admirable consideration of the subject. Probably the section of greatest interest is that upon the etiology, which the writer is so eminently fitted to discuss.

Vaccination, by Dock, is very satisfactory. We hope, however, for our sakes that the author has been given an opportunity of writing some other section which will be more peculiarly in line with the investigations in which he is especially interested.

Scarlet fever, and diphtheria, are by McCallom, aided by Mallory, and represents especially the excellent work done in these diseases in the South Department of the Boston City Hospital.

Measles, mumps, and whooping-cough are by Ruhräh; influenza by Lord; dengue by Coleman, of Georgia; erysipelas by Anders.

We are glad to have the article upon cerebrospinal meningitis by so able an authority as Dr. Koplik. His account of the etiology of the disease is very interesting.

Lobar pneumonia is by Musser and his associate, George Norris. It includes much new statistical material, for as the authors say in a foot-note to their title, they have "endeavored to collect all the statistics which are available. The statements made are based upon the study of thousands of cases reported in all parts of the world." To these have been added a large series of their own cases. No man is better suited to write the section than is Musser, for such an article implies the correlation of an immense amount of material, sociological, pathological, experimental, and clinical, and this needs a physician of great experience both in the natural history of the disease and also in the writing of medical text-books. Dr. Musser amply fulfils both qualifications. The article bears evidence that he has been ably supported by Norris. The chapters comprise about 100 pages. The sections upon etiology, bacteriology, and pathology are quite adequate. We turn with especial interest and expectation to the chapters upon symptomatology and treatment, for here we expect to reap the fruits of the enormous clinical experience of the senior author. In the main, the symptomatology, complications, and sequelæ are quite satisfactory; the treatment especially so, for no one understands better than Musser that the development of our knowledge of infections means a more active and intelligent treatment of them

along scientific and rational lines. But here the thought recurs, as it has done many times in reviewing the other articles in the System: it is unfortunate that the consideration of disease in such a book must be encyclopedic and not personal. We miss the chance of knowing Dr. Musser's personal opinion about the value of certain symptoms and physical signs, and which methods of treatment he employs himself. Let us hope that in the near future he may give us a monograph which will include his personal views upon pneumonia.

Asiatic cholera is by Dunbar, of Hamburg, and is very satisfactory.

One of the most interesting as well as valuable papers in the volume is that by James Carroll upon yellow fever. It is a great privilege to have on record in this standard work an account of the work done by Carroll, Reed, and their associates, written by one of their number. Besides being a description of the disease by one than whom no one is better fitted to write it, the section upon etiology adds much to the historical side of the book. We note a very pleasant tribute to Dr. Sternberg, and several references to Dr. Guiteras's confirmatory observations.

Richard Pearce writes the chapter upon toxemia, septicemia, and pyemia. The subject is very well presented and the ground is well covered. He emphasizes the value of blood cultures, and gives a very helpful section upon the antistreptococcic sera. We miss a consideration of inoculation by vaccine, which would have been timely and interesting.

Acute rheumatism, by Poynton, is extremely well done. The article is moderate and comprehensive, and while the author's attitude toward the disease is quite in accord with the most recent investigations, still he avoids an excessive enthusiasm for the bacteriological side of the question, and his consideration of the symptomatology and treatment is most satisfactory to the clinician. His paper is limited to the acute and undoubtedly infectious form of rheumatism, and he does not consider any other form of arthritis.

The chapter upon bubonic plague is by Calvert.

The last section is upon bacillary dysentery, and it is written by Dr. Shiga. The article has much the same historical value as that upon yellow fever. A point of added interest is the fact that Dr. Shiga wrote the article himself in English.

On the whole, the second volume quite maintains the standard set by the first, and in some respects surpasses it. J. D. S.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by H. A. Hare, M.D., Assisted by H. R. M. Landis, M.D. Volume III, September, 1907. Lea Brothers & Company, Philadelphia and New York, 1907.

The present issue of *Progressive Medicine* contains an article upon diseases of the thorax and its viscera, including the heart, lungs, and blood-vessels, by Dr. William Ewart, of London; one upon dermatology and syphilis, by Dr. William S. Gottheil, of New York; one upon obstetrics, by Edward P. Davis, of Philadelphia; and finally a summary of the literature upon diseases of the nervous system, by William G. Spiller. In Ewart's article a very considerable amount of space is devoted to the therapy of the various conditions with which he deals, notably one upon pulmonary hemorrhage in tuberculosis, and another upon the physical signs of acute respiratory and cardiac affections. There is also considerable space devoted to cardiac arrhythmia and heart clot. The article by Dr. Gottheil is written in a very entertaining manner, and gives much sound advice in regard to measures which should be taken in treating various diseases of the skin, particularly epithelioma and lupus. Syphilis is also carefully considered from its diagnostic and therapeutic standpoint. Perhaps one of the most interesting parts of the article by Dr. Davis is the space which he devotes to the diagnosis of early pregnancy in the treatment of placenta previa and in the treatment of eclampsia, all of which conditions come before the general practitioner for a careful consideration. It is interesting to

note that many Continental physicians are now resorting to veratrum for the control of eclamptic seizures. In Dr. Spiller's article upon diseases of the brain there is a careful consideration of brain tumors, aphasia, cerebral hemorrhage, and encephalitis. So, too, in the articles on diseases of the spinal cord, he considers the condition of the rectal sphincter in tabes, syphilis as a cause of tabes, and the value of the Argyll-Robertson sign in the diagnosis of ataxia.

DISEASES OF INFANCY AND CHILDHOOD. Their Dietetic, Hygienic, and Medical Treatment. By Louis Fischer, M.D. Freely Illustrated. The F. A. Davis Company, Philadelphia, 1907.

This new candidate for professional honors in the field of pediatric literature opens with a colored plate showing a child suffering from scarlet fever, which plate, by the bye, is considerably better than most colored plates which represent acute infectious diseases. The volume opens with chapters upon the development and hygiene of the infant and with diagnostic suggestions, then passes on to the abnormalities and diseases of the new-born, and then takes up the important subject of feeding in health and disease, to which about 150 pages are devoted. This, in turn, is followed by chapters upon diseases of the various parts of the body, such as the alimentary canal, the respiratory system, the circulatory system, the nervous system, and the infectious diseases. The last chapter of the book deals with the modification of milk, the examination of gastric contents, the urine, the use of anesthetics in children, the method of administering drugs to this class of patients, and a table of doses. Altogether the book shows, from first to last, the fact that the author is an active practitioner in the diseases of children, and that he writes very largely from his own personal experience, although of course in these modern days it is quite impossible not to quote a good deal from the experience of other investigators. The book is quite freely illustrated, and while the execution of the illustrations is not what it might be, they are sufficiently clear to show what the author intends to emphasize. We have no doubt that this book will soon take its place with the best of American contributions to this important subject.

A TEXT-BOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, M.D., LL.D. Second Edition, Thoroughly Revised. W. B. Saunders Company, Philadelphia, 1907. Price $4.00.

This is one of the smaller works on physiology, but the method in which it is printed permits the author to embody in its pages an immense amount of valuable information. As has been well said by one of the foreign journals, it is at the present time one of the best text-books of physiology in existence, being written by one who embodies not only the experience of a successful teacher, but also that of an original investigator in this sphere of medical science. The author has also recognized the fact that the average student of physiology studies this subject with the ultimate object of practicing medicine rather than becoming solely a scientific physiologist, and he therefore frequently points out the practical bearing of physiological facts. We regret that in many instances the text is so condensed that separate paragraphs do not occur for a considerable space, which always renders the use of a volume by the student more difficult than when minor subjects are separated one from another by proper spacing with the type. Modern physiology has undergone such changes in the last few years that much that is in this volume will prove of great interest to practitioners of some years' standing as well as to those who are endeavoring to obtain their medical degree.

A MANUAL OF HYGIENE AND SANITATION. By Seneca Egbert, A.M., M.D. Fourth Edition, Enlarged and Thoroughly Revised. Lea Brothers & Company, Philadelphia, 1907.

Medical students and practitioners needed for many years a brief manual of small size which would give them the necessary facts in regard to hygiene and sanitation. Dr. Egbert has succeeded in compiling

such a manual. The present volume of a little less than 500 small octavo pages deals with the subjects which are usually considered in such manuals, such as ventilation, water, foods, stimulants, beverages, personal and school hygiene, disinfection, quarantine, sewage, military hygiene, and vital statistics. On page 269 there is an interesting diagram showing the relative value of certain staple foods which puts in a graphic way information which it is well for the physician to remember. We are interested to note in the chapter upon stimulants and beverages that the author holds the view that under our present high tension of living there is a real physiological demand and need for them that, perhaps, should be satisfied in a measure, but with moderation and judgment. He also quotes with approval Fothergill's rules for the use of alcohol by the healthy, to wit: never have alcohol in the brain when it has work to do, and secondly, a little alcohol between a man and past trouble is permissible, but it is not well to put a little alcohol in front of a coming trouble. In other words, alcohol is a good servant but a bad master.

This book does not profess to be an exhaustive manual of hygiene, but is written in a somewhat conversational style which is easy to read, and affords valuable collateral reading for medical students and practitioners.

A Text-book of Physiological Chemistry for Students of Medicine and Physicians. By Charles E. Simon, B.A., M.D. Third Edition, Thoroughly Revised. Lea Brothers & Company, Philadelphia, 1907.

The first edition of this book appeared six years ago. It was designed as a guide in the physiological and chemical laboratory, and that it has proved popular is evident from the fact that its third edition is now before us. After introductory matter which covers about nine pages it deals with the chemistry of the albumins, the carbohydrates, the fats, the cleavage products of the albumins, the ferments, and the digestive fluids. Then follow chapters upon the processes of digestion and absorption, upon bacterial action in the intestinal canal, upon the feces, the urine, the blood, the muscle and nerve tissues, the eye and ear, and various other organs of the body. It goes without saying that much of the matter which is included in this volume is not of very great use to the physician in daily practice, but, on the other hand, the student who makes himself familiar with the theories, facts, and processes which are described will find in his days as an active practitioner that many pathological problems which would otherwise be obscure are clear. The issuance of a third edition depends upon the fact that the earlier edition was exhausted and upon the desire of the author to bring the text up to the latest investigations which have given results which can be considered reliable.

Pharmacology and Therapeutics. By Reynold Webb Wilcox, M.A., M.D., LL.D. Seventh Edition, Revised. P. Blakiston's Son & Company, Philadelphia, 1907. Price $3.00.

The contributions which have been made by Dr. Wilcox to the literature of materia medica and therapeutics consist of two volumes: one, that now under notice, and the other a companion volume upon materia medica and pharmacy which naturally is more elementary in its text than the one under consideration. In this volume the drugs are considered under special classifications and not in alphabetical order. The first classification, namely, that of "Drugs acting upon organisms which affect the human body or upon processes going on outside of it," seems to us a good illustration of the hopelessness of carrying to a satisfactory conclusion the classification of drugs for the use of students. Naturally, the most important drug considered in this class is mercury and its various salts, and we also find that antiparasitic drugs, such as male-fern, pomegranate, pumpkin seed, sulphur, and thymol, belong to the same classification, as does also cinchona and its salts. Other divisions are drugs which act upon the blood, upon the cardiac mechanism, upon the blood-vessels, upon the skin, etc. The book does not profess to be an exhaustive exposition of

pharmacology and drugs, but it is a very excellent résumé or summary of much of our present knowledge concerning the action and value of medicinal remedies.

PRACTICAL DIAGNOSIS. The Use of Symptoms and Physical Signs in the Diagnosis of Disease. By Hobart Amory Hare, M.D., Sc.D. Sixth Edition. Revised and Enlarged. Lea Brothers & Company, Philadelphia, 1907. Price $4.50.

The design of this book is to present the subject of diagnosis to the practitioner and student in such a manner as to make it easy to arrive at a conclusion in regard to the cause of the symptoms which are presented by the patient. The various diseases are not considered primarily, but, instead, symptoms are carefully considered as they are observed at the bedside, and then the various conditions which could produce these symptoms are differentiated one from another. Thus, in the chapter on the Feet and Legs the various manifestations of disease which appear in these parts are discussed, and the different diseases which produce these symptoms are then considered. So, too, in the chapter on headache and vomiting, the causes of these prominent symptoms are taken up and the conditions in which they arise are then considered.

A PHYSICIAN'S MANUAL OF THE PHARMACOPOEIA AND THE NATIONAL FORMULARY. By C. S. Hallberg, Ph.G., M.D., and J. H. Salisbury, A.M., M.D. The American Medical Association, Chicago, 1907.

This little pocket book of less than 200 pages appears as an epitome of all the articles contained in the U. S. P., Eighth Decennial Revision, and the National Formulary, and now that the United States government has made these two books official standards of strength and purity it possesses a value to physicians and pharmacists which it would not have possessed had it existed some years ago. The great advantage of the arrangement is that it gives under the pharmaceutical description of many drugs prescriptions which illustrate the best way of combining these remedies to produce good therapeutic results. In other words, it is a condensed pharmacopœia and formulary from which a large amount of very valuable information can be obtained. The doses, of course, are given, and the volume closes with a brief therapeutic index which does not of course describe the exact conditions in which the remedies are useful, but indicates in a general way the class of cases in which they can be employed.

GREENE'S ENCYCLOPEDIA AND DICTIONARY OF MEDICINE AND SURGERY. Volume V: Inulin to Lumbar Puncture. William Greene & Sons, Edinburgh and London, 1907.

We have already referred to the previous volumes of this encyclopedia in terms of praise. The contributors to the present volume are well known Englishmen who have written articles, in almost every instance, which are worthy of the reputation which they have achieved in their other contributions to medical literature. We are told in the preface that there are 47 articles of more than one thousand words; 69 articles of less than one thousand words and at least 10 lines in length; and 792 subheadings in short paragraphs dealing with more or less important subjects and divisions. Under the head of "Labor" a large number of conditions which complicate pregnancy and labor are discussed. To those who wish an English work giving encyclopedic information concerning matters medical we can cordially recommend the purchase of this one.

PRACTICAL FEVER NURSING. By Edward G. Register, M.D. Illustrated. W. B. Saunders Company, Philadelphia, 1907. Price $2.50.

The object of this book is to present the subject of fever nursing to nurses rather than to practitioners, the idea of the author being that a nurse if she is to intelligently care for a fever patient must have some knowledge of the causes of the illness. It is not necessary that she should know the cause and significance of many of the symptoms, but at the same time the author believes that the more prominent ones should be clearly understood by her, and that such an understanding cannot be reached unless she knows something of the pathological processes which produce

the symptoms. The book is copiously illustrated, shows the methods of giving the various baths and affusions, hot packs and cold packs, and seems to us in every way able to fulfil the object for which it was compiled; so it can be cordially recommended for the class of readers for which it is intended.

A Manual of Materia Medica. Especially Designed for Students of Pharmacy. By E. A. Ruddiman, Ph.C., M.D. Lea Brothers & Co., Philadelphia, 1907.

As this book is designed for students of pharmacy rather than for students of medicine, it contains practically no therapeutic information except that of a general nature, but, on the other hand, devotes itself to concise and concrete descriptions of the physical characteristics of those drugs which make up the materia medica of the present day. It also devotes considerable space to the toxicology of those drugs which are noteworthy as poisons. The author has adopted the general arrangement of well-known books on materia medica for that department which deals with pharmacognosy, and has used a modified arrangement of "Hare's Practical Therapeutics" for such therapeutic information as he thinks it wise to give. The dose of each medicinal substance is given in addition to the other facts concerning it.

A Manual of Clinical Diagnosis by Means of Microscopical and Chemical Methods. By Charles E. Simon, B.A., M.D. Sixth Edition, Thoroughly Revised. Lea Brothers & Company, Philadelphia, 1907.

As indicated in the title of this volume it is designed to be a "clinical diagnosis," not from the standpoint of physical signs but from the standpoint of chemical and microscopical examination of the secretions and tissues of the body. That it has thoroughly fulfilled its function is evident from its popularity. It is a much more useful book to the practitioner than the "Physiological Chemistry" by the same author which we have reviewed in this issue of the Gazette. No physician who has a private laboratory in which he examines the secretions of his patients can afford to deprive himself of the aid which this book will give him, or his assistant, in the investigations which it is essential that he should carry out to a successful conclusion.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. Edited by W. T. Longcope, M.D. The J. B. Lippincott Company, Philadelphia, 1907.

The present volume opens with four therapeutic articles dealing with diabetes, pneumonia, mechanotherapy, and tuberculosis. Other articles follow upon medicine, surgery, gynecology, genito-urinary diseases, ophthalmology, neurology, dermatology, and pathology, the latter being devoted to a consideration by Dr. Craig, of the United States Army, of the intracorpuscular conjugation of the malarial parasite.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series, Volume XII. O to P.

It is only necessary to welcome to the shelves of the library this monumental work of reference, which provides the medical profession of this country, and of other countries, with a complete list of medical literature as it exists to-day. It is impossible to estimate the benefit which has accrued to humanity in general and to the medical profession in particular by the publication of this splendid work.

A Report on the Origin and Prevalence of Typhoid Fever in the District of Columbia. By M. J. Rosenau, L. L. Lumsden, and Joseph S. Castle, including articles contributed by Stiles, Goldberger, and Stimson. Hygienic Laboratory, Bulletin No. 35. Government Printing Office, Washington, 1907.

This is an exhaustive consideration of the subject named in the title, covering nearly 400 octavo pages and illustrated with numerous charts. It deals with the epidemiology of the disease, and with the influence of milk, ice, and water in the dissemination of the malady. It also discusses the longevity of the bacillus typhosus outside of the human body; the alleged rôle of intestinal worms as inoculating

agents in typhoid fever; and a chemical examination of the water-supply of the District of Columbia. Analyses are also given of a number of bottled waters which are commonly supplied to the inhabitants of that district. Like the rest of the contributions from this department of the Public Health and Marine Hospital Service of the United States, this one adds very materially to our knowledge in general and to that of this almost universal disease in particular.

A Manual of Diseases of the Eye. For Students and General Practitioners. By Charles H. May, M.D. Fifth Edition. William Wood & Company, New York, 1907. Price $2.00.

Five editions and one or two extra printings of this most excellent little work upon diseases of the eye have appeared since August, 1901. It has been translated into German, Italian, French, Dutch, and Spanish. It is copiously illustrated in black and white and in colors, and while not large enough to be an exhaustive work it is a first-rate one for the general practitioner, who often has ocular conditions to study and care for.

The Physiology of Alimentation. By Martin H. Fischer, M.D. John Wiley & Sons, New York, 1907.

This book is intended for those whose interests lie in physiology as a science contributory to medicine. It does not profess to be a complete review of the physiology of the alimentary tract. It only deals with those subjects which the author has been accustomed to present to his students as Professor of Pathology in the Oberlin College of Medicine. It deals adequately with the movements and functions of the alimentary canal and with the digestion and utilization of foodstuffs.

Nutrition and Dysentery. By U. N. Mukerji, M.D. S. K. Lahiri & Company, Calcutta, 1905.

The object of this book, but just received, is well described in its title. It is designed to emphasize the importance of proper nutrition in epidemic dysentery, and contains a considerable number of tables illustrating the nutritive value of various foodstuffs and the urinary solids which are excreted under their use, and in the presence or absence of this disease.

CORRESPONDENCE.

LONDON LETTER.

BY G. F. STILL, M.A., M.D.

Congresses are in season. The frequenter of congresses is in the seventh heaven of enjoyment: a four-hour run to Exeter, and he is in the midst of British Medical Association revels; back to London, and he can hear the subject of educational hygiene turned inside out and upside down at the International Congress of School Hygiene; or if perchance he tires of so limited a subject (eleven sections, not including subdivisions), he can be at Leicester within a couple of hours and hear the British Association discussing all things in heaven and earth, including a smattering of medicine; and if he still craves for congress, he has only to take a short sea trip to Stockholm, where he will find the Eleventh International Congress on Alcohol in full swing; or to possess his soul in patience till next month, when he can hear the milk question discussed from every point of view, practical and impractical, at the Congress on Gouttes de Lait in Brussels. Surely if in the multitude of counselors there is wisdom, the twentieth century should be an era of wisdom unalloyed!

But to return to Exeter: certainly this year's meeting, if it lacked the extraordinary interest of last year's travel in distant

lands, was not lacking in scientific interest; the subjects for discussion had been well chosen, and stirred up some valuable debate. Dr. Risien Russell opened a discussion in the Section of Surgery on the indications for operation in cases of intracranial tumor, and laid stress in his remarks on some very important practical points; it is generally supposed that the proper treatment for syphilitic tumors of the brain is the administration of mercury and iodides, and if moderate doses fail the drugs are still to be pushed as the one hope of cure; but Dr. Russell said that surgical intervention is necessary in a considerable proportion of these cases, and his experience has convinced him that it is useless to waste valuable time in pushing antisyphilitic drugs if the symptoms do not speedily show evidence of yielding to such treatment. In cases of intracranial tumor in which urgent pressure symptoms supervene, or a patient is too ill to allow of any trephining operation, he considers that lumbar puncture is sometimes useful as a temporary and palliative measure.

The value of lumbar puncture both as a therapeutic and as a diagnostic measure was also under discussion in the Section of Medicine; the subject was introduced by Dr. Farquhar Buzzard, whose name, like that of his father, is already well known in connection with diseases of the nervous system. Amongst many views of the subject the absence of any protest against its indiscriminate use was remarkable and disappointing; there was much talk of its value in diagnosis, and some held that it is of service occasionally in treatment, but no one referred to the possible risks of its use.

One of the most attractive of the discussions was that in the Section of Physiology on the value of alcohol, which aroused great interest. It was opened by Professor Cushing with an able survey of the subject, which was characterized by more temperance than speeches on this topic often show: indeed, it was in marked contrast to some of those utterances which have recently been made by leading members of the profession in this country, and which rather incline the advocate of temperance to say, "Save me from my friends!" Professor Cushing said that it is undeniable that 95 per cent of alcohol taken undergoes combustion in the body, and is therefore a source of energy: it helps digestion by stimulating appetite; it might aid a failing heart; it has been shown by experiment on typesetters and students that the capacity for quick and accurate work is diminished by alcohol; in large doses alcohol undoubtedly diminishes the power of resistance to disease, but there is no evidence that small quantities have this effect. Experiments on animals are fallacious, for alcohol acts as a narcotizing agent on them, whereas on man it has an exciting effect.

In the Section on Diseases of Children Dr. Voelcker gave an interesting introductory address on nephritis in childhood, investigating the relation between renal inflammation in childhood and that in later life; and on the whole finding the prognosis less gloomy than is sometimes thought when a child develops nephritis. In the Dental Section a brisk discussion took place on dental caries in childhood; the chief opener was Mr. Edmund Owen, whose racy speeches always cast some ray of cheerfulness on the gloomiest of occasions, and in this particular instance were the more welcome as the Dental Section was consigned to a dungeon-like department which in more orthodox times served for the trial of criminals, and which the liveliest of counsel could hardly render more than tolerable. However, more than the requisite "twelve good men and true" were impaneled to try this weighty issue, and Mr. Owen held forth in no measured terms on the degeneracy of modern times in the matter of diet. He thought that our white bread, with its unnaturally white flour, is partly responsible for the prevalence of dental decay in children; he inveighed also against the use of patent foods for infants, which he said are the cause of much rickets, and so of wide-spread dental caries; and he appealed to the dentists for more active

measures in dealing with decayed teeth in children; such teeth, he said, should be removed without hesitation. From the medical standpoint I had the honor of opening the discussion, and pointed out the profound influence on nutrition which may result from dental caries in children. Nervous disorders, such as headaches recurring frequently, and habit spasm, and sometimes even epilepsy, are traceable to this cause; it is probable that indirectly if not directly decayed teeth favor the occurrence of tuberculous disease of the lymphatic glands in the neck. Diet probably has rather an indirect than a direct influence in promoting caries; it affects digestion, and so alters the secretions in the mouth that bacteria are able to produce fermentation about the teeth and so erode the enamel; sweets probably act in this way by disturbing digestion, not by any direct effect upon the teeth.

The inhabitants of Exeter, medical and otherwise, showed no lack of hospitality to their visitors, and this visit of the British Medical Association to the west of England was a notable success.

Before the meeting was over the International Congress of School Hygiene had begun its session in London, and many hurried back from Exeter to take part in it. Sir Lauder Brunton was the moving spirit in this and gave the presidential inaugural address. The headquarters of the Congress were at the University of London in Kensington, where the opening meeting was held. The Earl of Crewe had been requested by his majesty the King to attend the formal opening of the proceedings, and made an excellent speech expressive of the interest taken by the present government in the health of the schoolchildren of this country. On behalf of the late government Lord Londonderry spoke in the same strain, specially approving of military drill for boys. Sir Lauder Brunton in his presidential remarks hinted at some obscure *contretemps* which had threatened to make the Congress a fiasco; and rumor says that on some point the Board of Education and the Foreign Office were at variance, and that it was only by the King's good services that the quarrel was settled in time to allow the Congress arrangements to be carried through. The dominant note of Sir Lauder's speech, as indeed of most of the papers read at the Congress, is the need for medical inspection of schools. Altogether 244 papers were read, so I cannot attempt even to mention the gist of the few which I happen to know something about. Suffice it to say that there were several wholesome protests against the overworking of children at school, that there was a strong feeling that the elementary principles of hygiene should be taught both to teachers and scholars, and that one and all clamored for medical inspection, and that there seemed to be a sort of idea that some enormous national benefit would accrue from the heaping up of statistics which might be achieved by medical inspection. I must defer any further account of the proceedings till next month. The Congress ended its work on August 9, each section drawing up some resolution as the result of its deliberations; and a small permanent committee was formed to promote the interests of school hygiene. A final address was given by Professor Griesbach on the relations between medicine and pedagogy.

Amongst the events of the month a very gratifying one is the large gift from Mr. Carnegie to the King Edward VII. Hospital Fund. Hitherto Mr. Carnegie's generosity has taken the direction chiefly of educational endowment, but the £100,000 which he has now given will go to a good purpose, if it be used more wisely than the hospitals themselves seem inclined to use their funds. The building-itch has attacked so many hospital institutions that it is high time for some central authority to put bounds to the thriftless extravagance which some London hospitals have recently shown in this direction.

Another event which must be mentioned is the promotion of Prof. Howard Marsh, the Regius Professor of Surgery at Cambridge, to the Mastership of Downing College, which was held till recently by Dr. Alexander Hill.

PARIS LETTER.

BY R. H. TURNER, M.D. (PARIS).

Claims for damages are not often asked in France by patients, so that a recent case in Paris has excited a good deal of attention. A medical man, Dr. Cormon, had been called in to attend a young woman, Mlle. Peyronnette, suffering from appendicitis, and as the result of his treatment by ice-bags an eschar had formed, and 50,000 francs damages were claimed. Dr. Balthazard, the medical expert, who had been chosen by the court to give his opinion, had been rather severe in his first report, but when the trial came on he was much less so, and he found arrayed against him the whole faculty, who one and all considered this eschar an accident which in nowise could be foreseen. Dr. Cormon had been accused of not using a piece of flannel cloth as a protection, but he argued it was the practice of many surgeons to apply the ice-bag directly on the skin. The prosecution found it could not attack Dr. Cormon on this count, so it accused him of having failed to see the symptoms indicating the advent of an eschar. Dr. Cormon, who remained very calm and cheerful through the whole proceeding, answered that he had foreseen them, and had then had the ice removed. Dr. Jalagnia and Professor Dieulafoy declared that there was no exact limit as to the amount of time during which ice should be used on the abdomen, and as for the eschar, it sometimes appears with the greatest rapidity. Dr. Dieulafoy said he came to the bar to defend the medical profession, which was being attacked in the newspapers, at dinner parties, and at receptions. Dr. Cormon had not taken the temperature of the patient, which was another fault of which he was accused. Dr. Triboulet, who succeeded to Dr. Cormon in the treatment of the patient, said he had very few changes to make in what was done. Judgment was given as usual a week after the calling of witnesses, and Dr. Cormon was acquitted.

In connection with this the following is published in the *Matin:* "A millionaire, Mr. Soller, has offered a million francs to the Assistance Publique, the great medical charity organization of Paris, to be used in controlling the physicians and surgeons of the Paris hospitals. Mr. Soller thinks that they are apt to forget that the patient is not to be used as a means of experimenting with new remedies. The counsel of the Assistance Publique, after having heard what a certain number of physicians had to say about this, refused the bequest, as no physician would care to be supervised by men who were not physicians."

This is now the great season for watering-places, and everything is at its best at the French resorts. During a recent trip to one of the latter the writer of this letter was able to judge of the efforts that are being made to attract patients. At Aix-les-Bains there were to be seen in May and the early part of June the usual crowd of English people who visit this famous resort at this time in preference to a later season. In fact, Aix-les-Bains is very hot in midsummer, this excessive heat being perhaps part of the cure in connection with the warm baths. Still, if one cares for quiet, it is best to take one's treatment in June or in September. There was a good deal of interest excited by the question of the closing of the gaming tables, which are an important source of revenue to the Casino. In the month of May there was no playing allowed, and up to the 3d or 4th of June the place remained very quiet. As soon as permission was given by the central government the tables were brought out, and immediately an undesirable crowd of visitors made its appearance in Aix-les-Bains.

Vichy toward the end of May is quiet and peaceful, quite different from what it becomes a few weeks later, when the crowds of patients, one hundred thousand a year, begin to appear. The bathing establishment, which was opened in 1902, is marvelously clean and well built, and the Casino is also most artistic. A resort

which is gaining steadily in public favor is Chatel Guyon, a small village near Clermont-Ferrand, in the Auvergne, which is a volcanic country and full of hot springs. The waters, which are specially characterized by chloride of magnesium, are excellent for the treatment of muco-membranous enteritis, constipation, or diarrhea. They have a tonic effect on the intestines, and 10,000 to 15,000 bathers come every year now. There is at present a strife between two companies as to getting the water, somewhat like that seen in former days in the oil regions, the new company sounding here and there to find new springs. It is backed by financiers, and may cause some damage to the old company. The water is not unpleasant, and the baths, which contain carbonic acid and are furnished with running water, have a most tonic and agreeable effect.

Further south lies La Bourboule, a climatic resort, famed for containing in its waters the largest amount of arsenic in Europe, the equivalent of 21 drops of Fowler's solution in each liter. They are much employed for skin diseases, scrofulous children, and convalescents. Mont-Dore, which is situated further up the valley of the Dordogne, is more for asthma and chronic laryngitis, and the season opens later there, not much before the 15th of June, as the altitude is well-nigh 3300 feet.

On the other side of the mountains lies Royat, near Clermont-Ferrand, which has also arsenical waters, and is now getting up a reputation for heart troubles; and to the east, in a pretty little valley, lies St. Nectaire, famous for its use in albuminuria. The whole country of Auvergne is filled with old ruined castles, and nothing could be more agreeable for a medical man than to motor through such a country, where at every watering-place he will be most hospitably received, given the treatment gratis, and entertained by the medical men of the place.

Further south lies Le Puy, which, though not a medical resort, is perhaps in some ways the most interesting town in France, volcanic eruptions having left their traces in the surrounding country by the formation of high dykes or craters.

At this time of the year Paris is not only deserted by its inhabitants, but also by the medical practitioners, so that the few who remain in town often have their hands full seeing to all the patients who may need their care. It is hard to get a specialist if some obscure nervous trouble or peculiar form of anemia needs investigation, and it is then found how much the existence of specialists is useful to the general practitioner.

A month or two ago a book was published in Paris bearing the title of "Defends ta pean contre ton médecin," which means "Protect your life against your doctor." This book had been extensively advertised, placards with the title being pasted up on buildings in various parts of Paris. It is a scurrilous attack on doctors, written by two men who seem to know something about medical life, and who seek to show that medical men are usually incompetent, untrustworthy, and lacking in every virtue or quality. One wonders what may be the cause of all this excess of ire on the part of the authors, but on reading the chapters on radiography it may be inferred that the fact that physicians have been given a practical monopoly of this branch of therapeutics has aroused the indignation of these men. The book at first is somewhat amusing, but one tires soon of the constant flow of malice which is poured forth page after page. There is, as usual, a few grains of truth in what is published in this work, but one can see soon enough that the writers are playing the rôle of *advocatus diaboli*. It can be said of any profession that there are good and bad men who practice it, but it would be well-nigh impossible to find men more painstaking and conscientious than those who grace the medical profession, either in Paris or in other countries.